Panasonic

Operating Instructions

Memory Card Portable Recorder

Model No. AG-HPG10P

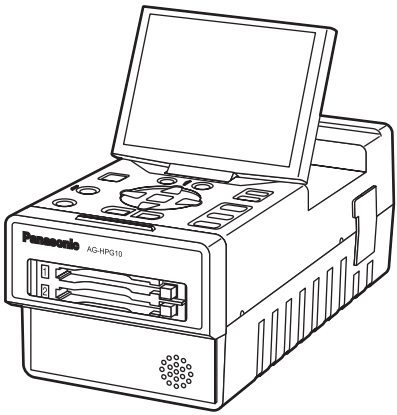
P2HD

DVCPRO HD

DVCPRO 50

DVCPRO

DV



SD

Before operating this product, please read the instructions carefully and save this manual for future use.

F0707K0 -M D
Printed in Japan

ENGLISH

VQT1H84

Read this first!

indicates safety information.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

THE AC RECEPTACLE (MAINS SOCKET OUTLET) SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.
TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.

CAUTION:

Danger of explosion or fire if battery is mistreated.

For Battery Pack

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C (140°F).
- Use specified charger.

Memory Card Portable Recorder
The rating plate is on the underside of the unit.
AC Adapter
The rating plate is on the underside of the AC Adapter.
Disconnect the AC mains plug from the AC mains socket when not in use.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

IMPORTANT

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

FCC NOTICE (USA)

Declaration of Conformity

Model Number: AG-HPG10
Trade Name: PANASONIC
Responsible Party: Panasonic Corporation of North America One Panasonic Way, Secaucus, NJ 07094
Support contact: Panasonic Broadcast & Television Systems Company 1-800-524-1448

This device complies with Part 15 of FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
To assure continued compliance, follow the attached installation instructions and do not make any unauthorized modifications.

CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the booklet “Something About Interference” available from FCC local regional offices helpful.

FCC Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user’s authority to operate this device.

NOTIFICATION (Canada)

This class B digital apparatus complies with Canadian ICES-003.
Cet appareil numéique de la classe B est conforme à la norme NMB-003 du Canada.

A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

For USA-California Only

This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material – special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate.

Recommendation for Use of Genuine Panasonic Battery Pack (Rechargeable Battery)

Thank you for using a Panasonic product.

It has been our policy to recommend that the genuine Panasonic battery pack be used for any Panasonic product that uses a battery pack, including digital cameras. It has, however, been found that imitation battery packs that look very similar to the genuine Panasonic battery pack are marketed in some markets.

Some of these imitation battery packs are not equipped with any protective devices that meet given quality standards for permitting use at high power outputs and for long hours.
If any of these battery packs of inferior quality is used, it could lead to an accident or failure involving firing or explosion.

To ensure that our products are used in utmost safety, we once again remind you that we recommend the use of a genuine Panasonic battery pack for any Panasonic product that is to use a battery pack. The genuine Panasonic battery packs are sold under our stringent quality control.

Please be advised that we are not liable for any accident or failure occurring as a result of use of an imitation battery pack.

We appreciate your kind understanding and cooperation in this regard.

Software information for this product

1. Customer advisory: This product includes software licensed under the GNU General Public License (GPL) and GNU Lesser General Public License (LGPL); customers have the right to download, modify, and redistribute source code for this software.
   Descriptions of the GPL and LGPL are stored on the installation CD included with this camera-recorder. See the folder named \LDOC. (The description is the original (written in English).) To download the relevant source code, visit https://eww.pavc.panasonic.co.jp/pro-av/
   Please note that we cannot answer any questions you may have about the content, etc. of any source code you may obtain from the above Web site.

2. This product includes software licensed under the MIT License. A description of the MIT is stored on the installation CD included with this portable recorder. See the folder named \LDOC. (The description is the original (written in English).)

• SD logo is a trademark.

All other explanations, company names, and product names are the registered trademarks of the respective companies.

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

S3125A

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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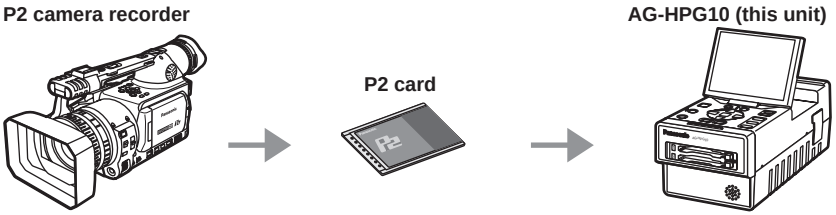
How to use the unit

Housed in a compact cabinet which can be battery-powered, this Portable Memory Card Recorder comes with two P2 card slots, a 3.5-inch LCD monitor, USB 2.0, IEEE1394, component signal, composite signal and many other input/output signal connectors, and it can be easily operated to play back the data content which has been shot by a P2 camera recorder. It is also capable of backup recording and file management, and it supports P2 field recording.

Playing back data content

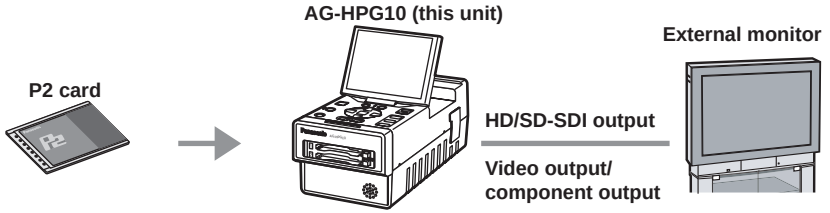
1 Playing back the data on the unit's LCD monitor (page 42)

Data content (both pictures and sound) which has been shot on P2 cards using a P2 camera recorder can be played back on the spot.



2 Outputting the data to the external monitor for playback (page 46)

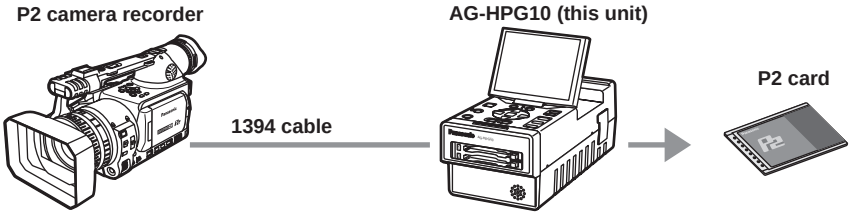
The data content (both pictures and sound) which has been shot on P2 cards can be output to the external monitor, and played back.



Recording data on P2 cards

3 Simultaneous recording of data onto P2 cards (page 48)

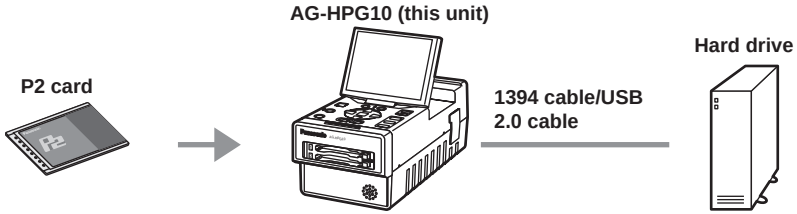
When connected to a P2 camera recorder, the unit enables the data content being shot to be monitored on the unit's display and the same data to be simultaneously recorded onto a P2 card.
The unit's recording start and stop operations can be performed from the camera recorder.



Saving data in external devices

4 Saving data onto an external hard drive (page 50)

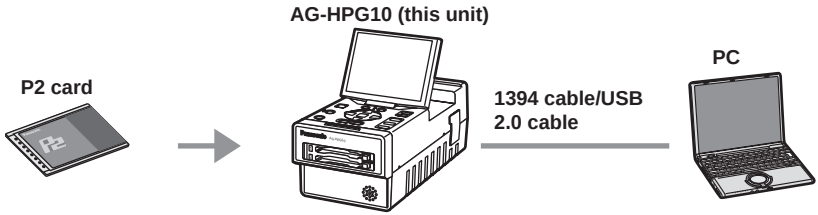
The data content of P2 cards can be saved onto an external hard drive.
Also, the data saved on an external hard drive can be reloaded onto a P2 card.
(Only in the USB HOST mode)



Editing

5 Editing by connecting the unit to a PC (page 62)

The unit can be connected to a PC, and the PC can then be used to edit the data content on P2 cards.



About this manual

Note concerning illustrations in these instructions

- Illustrations (portable recorder, menu screens, etc.) in these operating instructions differ slightly from the actual portable recorder.

References

- References are shown as (Page 10).

Before use

Be absolutely sure to check the calendar and time zone, and set them if necessary.

- The calendar and time zone affect the management and playback sequence of the data content which has been recorded. Before recording, set and check the calendar and time zone. (Page 21)

No compensation can be made for video recordings.

- The manufacturer will not provide any compensation in the event that images fail to be recorded due to trouble while the unit and P2 card are being used.

Concerning copyrights

- You may use the images and sound which you have recorded for your own personal enjoyment only; under copyright laws, you may not use them for any other purpose without the permission of the copyright holders.

Precautions when connecting the unit using a DV(IEEE1394) cable

- **Windows:**
  Before connecting the cable, turn off the unit's power, and check the shape and insertion direction of the cable connector.
- **Apple Macintosh**∗
  Before connecting the cable, turn on the power of the Apple computer, and then check the shape and insertion direction of the cable connector. (Page 50)

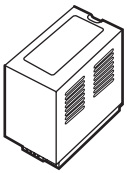
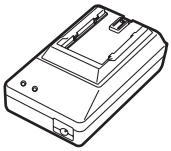
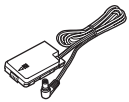
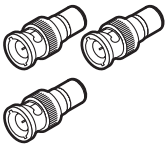
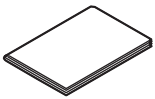
Media which can be used with this unit

You may use the following media. For further details, refer to the pages on the media concerned.

- P2 cards (page 22)
- SD memory cards (page 26)

Refer to page 86 for other operating precautions.

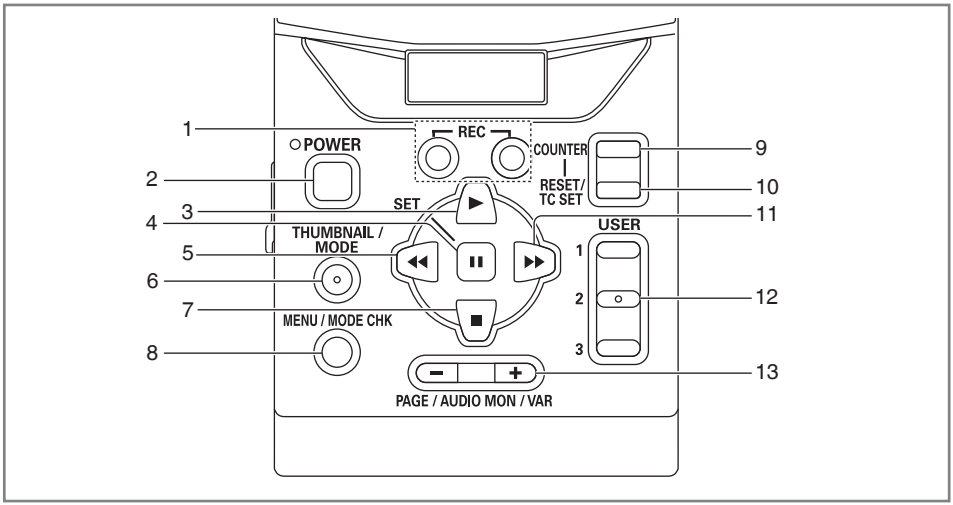
Accessories

Battery∗ 	**AC adapter** 	**AC power supply cord**	**DC cord** 
Component video cable	**Pin-BNC conversion plugs (x3)** 	**Operating Instructions** 	**P2 card driver software (CD-ROM)**

∗ For the model number of the battery, refer to the [OPTIONAL PERIPHERALS] item (page 91).

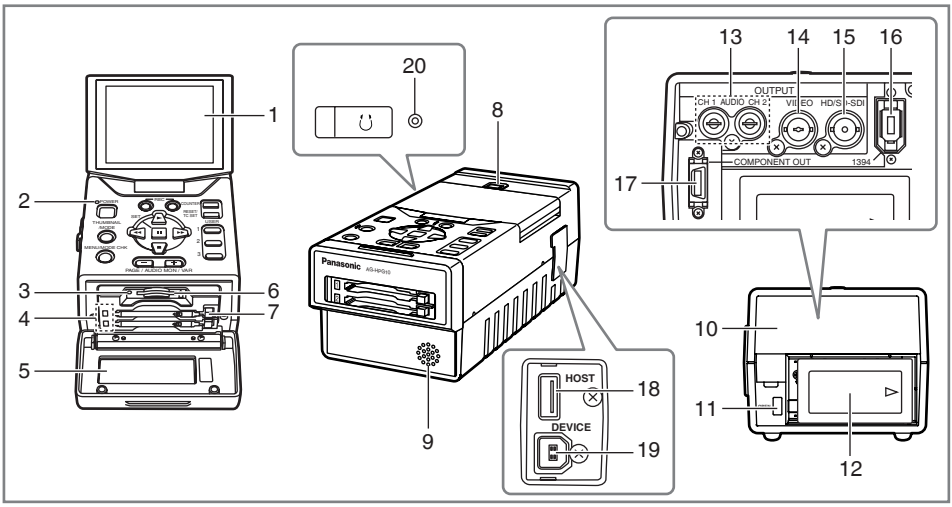
Name of the parts

Operation area



1 REC button (page 48)
2 POWER button (page 16)
3 PLAY button (page 17)
4 STILL button (page 17)
5 REW button (page 17)
6 THUMBNAIL/MODE button (Page 17)
7 STOP button (page 17)
8 MENU/MODE CHK button (Page 17)
9 COUNTER button (page 49)
10 RESET/TC SET button (page 20)
11 FF button (page 17)
12 USER button (page 25)
13 PAGE/AUDIO MON/VAR button (Page 43)

Mechanism area and input/output connector area



1 LCD monitor (page 16)
2 Power plug (page 16)
3 SD card access LEDs (page 26)
4 P2 card access LEDs (page 22)
5 Card slot cover
6 SD card slots (page 26)
7 P2 card slots (page 22)
8 LCD monitor open button (page 16)
9 Speaker (page 64)
10 Connector area cover
11 Battery eject button (page 15)
12 Battery (page 14)
13 AUDIO OUT CH1/CH2 connectors (page 46)
14 VIDEO OUT connector (page 46)
15 HD/SD-SDI OUT connector (page 46)
16 IEEE1394 input/output connector (page 48)
17 Component output connector (D4 connector) (page 46)
18 USB 2.0 connector (Type A) (page 50)
19 USB 2.0 connector (Type B) (page 60)
20 Headphone jack (page 64)

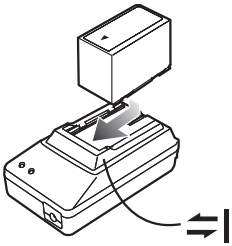
Charging the battery

Charging

Before using the battery, give it a full charge using the AC adapter. It is recommended that you have a spare battery available in case you need it.

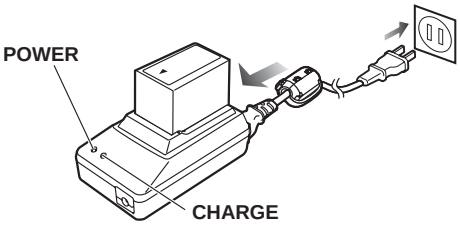
1 Place the battery horizontally while aligning it with the ⇌| mark on the AC adapter, and slide it into position.

- If the DC cable is connected to the AC adapter, disconnect it before proceeding any further. The battery cannot be charged if this cable is left connected.



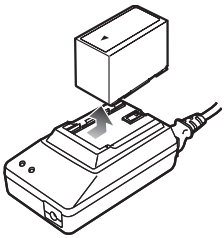
2 Connect the AC cable to the power outlet.

- The POWER and CHARGE lamps on the AC adapter light, and charging starts.
- If the CHARGE lamp fails to light when the battery has been installed, remove the battery and then re-install it.



- When the battery has been charged, the CHARGE lamp on the AC adapter goes off.

3 Slide the battery out of position, and remove it.



Charging time and play time of supplied battery

Capacity	Charging time	Continuous playback time
5400 mAh	Approx. 330 minutes	Approx. 240 minutes

- The times given in the above table are approximate figures based on playback in the DVCPRO HD mode.
- The times given in the above table are obtained at an ambient operating temperature of 20 °C and an ambient relative humidity of 60%.It may take longer to charge the battery at other temperature and humidity levels.

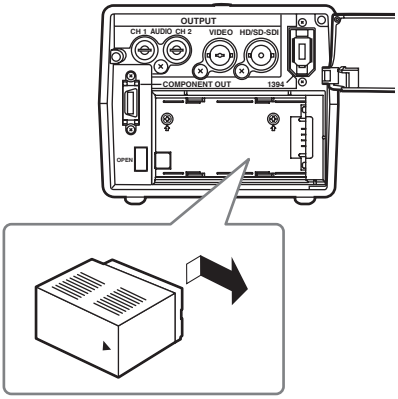
- While the battery is being used or charged, it will become hot.
- If the playback and stop operations are repeated more than necessary, the playback time will be shorter than the time given in the above table.
- Before storing the battery, make sure that it is discharged.
  When the battery is to be stored for a prolonged period, it is recommended that you charge it once a year, use the battery in the unit until its charge is used up, and then return it to storage.
- When the battery temperature becomes extremely high or low or when a discharged battery has been left unused for a prolonged time, the CHARGE lamp will blink several times, and charging will commence automatically.
- When the CHARGE lamp continues to blink even when the battery is at the right temperature, it may indicate a failure in the battery or AC adapter. Contact your dealer.
- When the battery is warm, it will take longer than usual to recharge it.
- When the AC adapter is used near a radio, the sound from the radio may be distorted. Use the AC adapter and radio at a distance of at least 1 meter from each other.
- Noise may be heard from the AC adapter while the AC adapter is being used: this is normal and not a sign of trouble.
- The battery cannot be charged when power is supplied to the unit from the AC adapter.
- No guarantees are given for the operation of the VW-VBD33C (1500 mAh) optional battery pack.

Installing and removing the power supply

Installing and removing the battery

Insertion

1 Insert the battery until it clicks into place.

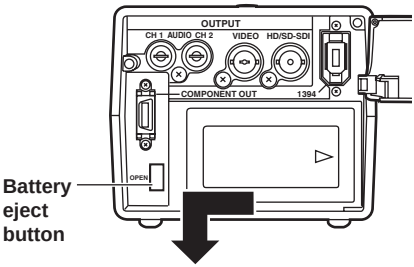


Removal

1 Press [POWER] for at least 2 seconds to turn the power off, and check that the power lamp has gone off (page 16).

2 Remove the battery while pressing the battery eject button.

- Support the battery with your hand to ensure that it will not drop down.



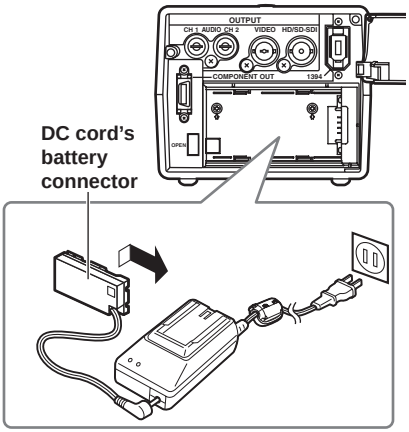
Connecting and disconnecting the power cable

Insertion

1 Connect the DC cord to the AC adapter.

2 Connect the AC power supply cord into the power outlet.

3 Insert the DC cord's battery connector until it clicks into place.



Removal

1 Press [POWER] for at least 2 seconds to turn the power off, and check that the power lamp has gone off (page 16).

2 Remove the DC cord's battery connector while pressing the battery eject button.

3 Disconnect the AC power supply cord from the power outlet.

- The battery cannot be charged when power is supplied to the unit from the AC adapter.
- The AC adapter is designed to work anywhere in the world with supply voltages ranging from 100 V to 240 V and with power line frequencies of 50 Hz and 60 Hz. However, in some countries the shape of the power outlet receptacle differs. In cases like this, obtain the plug that will fit the receptacle. Obtain the conversion plugs after consulting with your dealer.
- When the unit is not being used, disconnect the AC cable from the power outlet.

Basic operations

Turning the power on and off

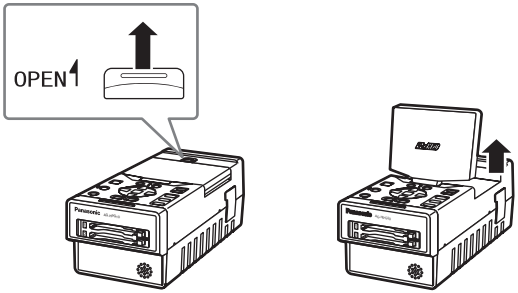
Hold down [POWER] for at least 2 seconds.

- The power lamp lights, and the power is turned on.
- When [POWER] has been held down for more than 2 seconds while the power is on, the power lamp will go off, and the power will be turned off.

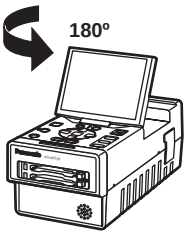
Using the LCD monitor

1 Hold down [POWER] for at least 2 seconds to turn the power on.

2 Raise the LCD monitor while pressing the LCD monitor open button in the direction shown by the arrow.

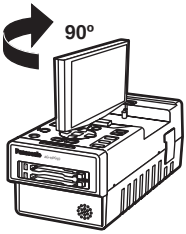


3 Set the LCD screen to the angle where it is easiest to see its displays.



The LCD monitor can be turned 180 degrees to the left.

- The monitor cannot be turned more than 180 degrees. Applying excessive force beyond this limit may cause trouble in the unit.



The LCD monitor can be turned 90 degrees to the right.

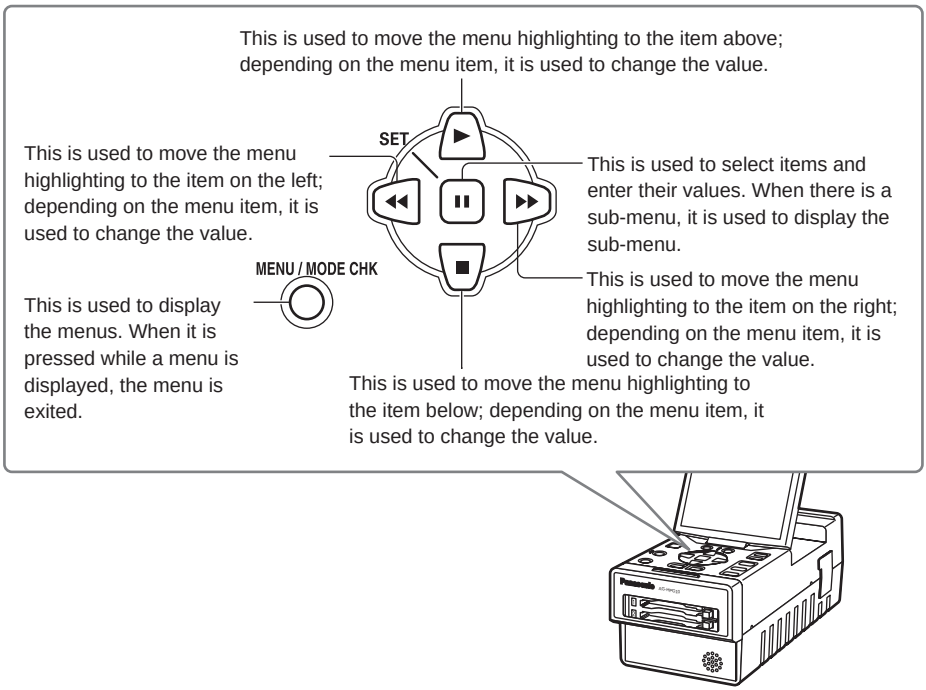
- The monitor cannot be turned more than 90 degrees. Applying excessive force beyond this limit may cause trouble in the unit.

Make sure that the LCD monitor is raised upright before turning it.

Menu operations

This unit is provided with three kinds of screens: the thumbnail display screen, thumbnail display off screen (1394 input standby mode, playback standby mode) and PC mode screen. When [MENU] is pressed on any of these screens, the menu will be displayed. (No menus are displayed in the USB DEVICE mode or 1394 DEVICE mode.)

■ Operations performed when the function buttons are pressed


This is used to move the menu highlighting to the item above; depending on the menu item, it is used to change the value.
SET
This is used to move the menu highlighting to the item on the left; depending on the menu item, it is used to change the value.
This is used to select items and enter their values. When there is a sub-menu, it is used to display the sub-menu.
MENU / MODE CHK
This is used to display the menus. When it is pressed while a menu is displayed, the menu is exited.
This is used to move the menu highlighting to the item on the right; depending on the menu item, it is used to change the value.
This is used to move the menu highlighting to the item below; depending on the menu item, it is used to change the value.

■ Example of a menu operation:

1 Press [MENU] to display the menu.

2 Press [STOP] and [PLAY] to move the menu highlighting, and select the item.

3 Press [STILL].

- If another menu has been displayed, repeat steps 2 and 3.
- Depending on the item, the value is changed using [STOP], [PLAY], [FF] and [REW].
- Depending on the item, a confirmation screen will be displayed.
- Depending on the item, the original screen is restored automatically.

4 Press [MENU] to exit the menu.

Operation modes

This unit has the following 3 modes which can be selected by pressing [MODE].

POWER

Turn on the power.

Thumbnail display screen

On this screen, the data content on the P2 cards is displayed as thumbnails to play back or manage the clips.

Playback
(PLAY, STILL, FF, REW)

Stop (STOP)

THUMBNAIL / MODE

Hold down this button for at least 2 seconds to switch to the PC mode.

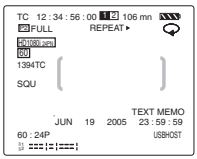
THUMBNAIL / MODE

When a P2 card has been ejected

THUMBNAIL / MODE

Thumbnail display off screen (1394 input recording standby, playback standby mode)

- Connect the unit to the device equipped with the IEEE1394 connector, and proceed with simultaneous playback and recording.



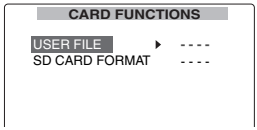
Playback

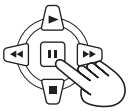
Recording

THUMBNAIL / MODE

Hold down this button for at least 2 seconds to switch to the PC mode.

- Display the menu, and perform the various settings.



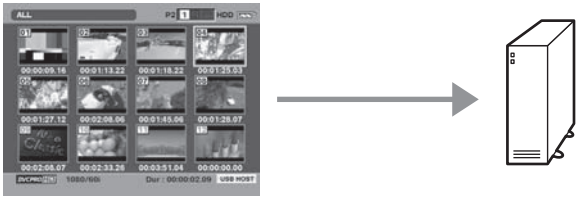


PC mode

Connect the unit to the external device, and save or manage the clips. Depending on the connection method and application, the USB HOST mode, USB DEVICE mode, 1394 HOST mode and 1394 DEVICE mode are available; perform the mode settings using the setting menu on the thumbnail display off screen.

- USB HOST mode

  Connect to a device equipped with a USB connector, and operate the connected device.

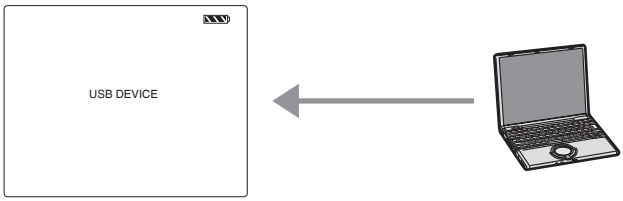


- 1394 HOST mode

  Connect to a device equipped with an IEEE1394 connector, and operate the connected device.

- USB DEVICE mode/1394 DEVICE mode

  Connect to a device equipped with an IEEE1394 or USB connector, and operate the data on the unit's P2 card from the connected device.



Turn the power off (exit the PC mode).

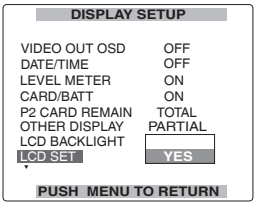
LCD monitor settings

1 Hold down [POWER] for at least 2 seconds to turn the power on.
First check that an image is displayed on the LCD monitor, and then adjust the angle of the monitor to the position where it is easiest to see its displays.

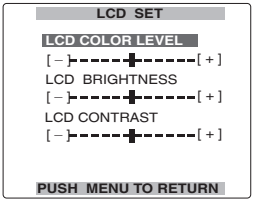
2 Press [MODE] to display the thumbnail display off screen.

3 Press [MENU].
Basic operations on the setting menus. (page 70)

4 Using [STOP] and [PLAY] select “YES” for the “LCD SET” item on the setting menu “DISPLAY SETUP” screen.



5 Using [STOP] and [PLAY] , select the item to be set.



LCD COLOR LEVEL:	This adjusts the color density of the screen.
LCD BRIGHTNESS:	This adjusts the screen brightness.
LCD CONTRAST:	This adjusts the screen contrast.

6 Using [FF] or [REW], adjust the selected item.

7 Press [MENU] 3 times to release the menu mode.

- The adjusted values can be restored to their factory settings by pressing [RESET].

Setting the calendar

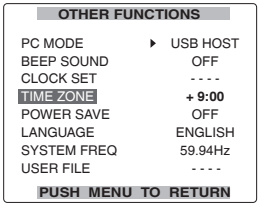
The “CLOCK SET” value is recorded on the data content (clips), and it affects the sequence in which the thumbnails are played back. Before recording, be absolutely sure to check the “CLOCK SET” and “TIME ZONE” settings, and set them if necessary. Described below is the procedure for setting the clock to 5:20 PM on May 25, 2007.

1 Hold down [POWER] for at least 2 seconds to turn the power on.

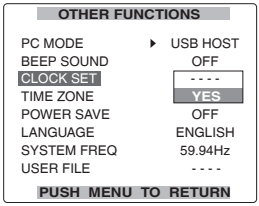
2 Press [MODE] to display the thumbnail display off screen.

3 Press [MENU].
Basic operations on the setting menus. (page 70)

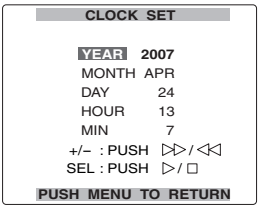
4 At the “TIME ZONE” item on the setting menu “OTHER FUNCTION” screen, set the time difference from Greenwich Mean Time (GMT) using [STOP] and [PLAY] (page 78).
If the unit is going to be used in Japan, set to 9 hours ahead (factory mode) of GMT.



5 Select “YES” at the “CLOCK SET” item on the setting menu “OTHER FUNCTION” screen.

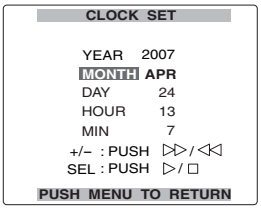


6 Press [FF] or [REW] to set “YEAR” to “2007”.

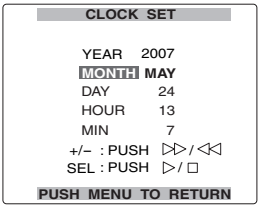


Any year from 2000 to 2030 can be set.

7 Press [STOP] to move the setting item to “MONTH”.

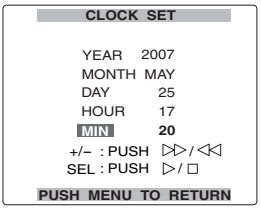


8 Press [FF] or [REW] to set “MONTH” to “MAY”.



9 Use the same method as in steps 4 and 5 to set “DAY”, “HOUR” and “MIN”.

- The 24-hour clock system is used by this unit.



10 Press [MENU] 3 times to release the menu mode.

- An error will occur in the time so check that the time is correct before shooting.
- If the unit is going to be used overseas, do not set the “CLOCK SET” item to the current time but input the time difference from GMT using the “TIME ZONE” item.

P2 cards

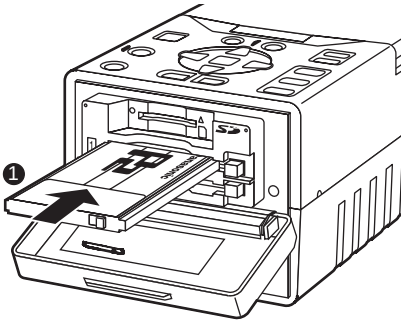
Inserting P2 cards

• When the unit is to be used for the first time, the first step is always to set the internal clock. (Page 23)

1 Hold down [POWER] for at least 2 seconds to turn the power on.

2 Insert the P2 card into the P2 card slot as far as it will go.

• When the P2 card is inserted into the unit, the P2 card status is displayed by the P2 card access LED.
For details on the P2 card status displayed, refer to “P2 card access LED and P2 card status.”



P2 card access LED and P2 card status

P2 card access LED	P2 card status
Lights up green	Data can be saved on the card or loaded from the card.
Lights up orange	Data can be saved on the card or loaded from the card, and the data of the current recording is targeted.
Blinks in orange	Data is now being saved or loaded.
Blinks rapidly in orange	The recognition process of the P2 card is underway.
Blinks in green	The P2 card is out of memory. Data can be read out only.
	The write-protect switch on the P2 card is at the PROTECT setting. Data can be loaded only.
Off	The P2 card has not been formatted properly. Re-format the card using the unit.
	The card cannot be used by the unit. Replace the card.
	The P2 card is not installed.
	The P2 card is not being accessed in the USB DEVICE mode.

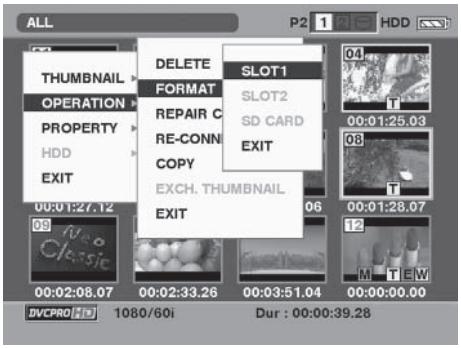
• The P2 card statuses can be checked in detail.
Refer to “Displaying the P2 card status” on page 42.

Formatting P2 cards

1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen now appears.

2 Press [MENU].

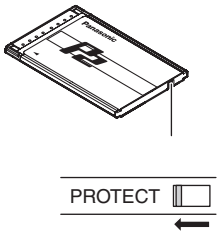
3 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "FORMAT", and press [STILL].
- A screen such as the one shown below now appears. Select the number of the slot in which the P2 card to be formatted has been inserted. If the card is not going to be formatted, select "EXIT".
- If [MENU] is pressed, the menu display is cleared.



4 Select "YES" on the confirmation screen, and press [STILL].
- The selected P2 card is now formatted.

P2 card protection

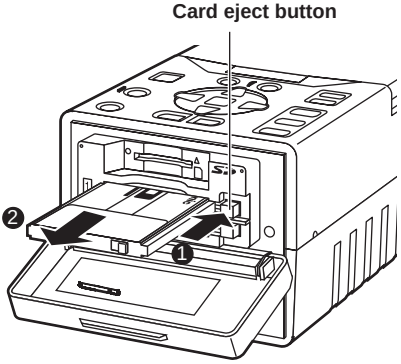
To prevent the data recorded on the P2 card from being deleted by mistake, set the write-protect switch on the P2 card to PROTECT.



Ejecting P2 cards

1 Press [STOP].
When the access LED of the P2 card to be ejected is blinking in orange, press the [STOP] to stop it blinking.

2 Push the card eject button once, and when the button pops out, push it again.



- Do not eject cards or turn off the power in the following situations: otherwise, this may cause P2 card trouble.
  ① While the orange card access lamp of the P2 device is changing from blinking to lighting after the P2 card has been inserted
  ② During recording, during the process to complete recording or while the P2 card access lamp is blinking
- In the event that a P2 card being formatted or accessed has been ejected, “TURN POWER OFF” is displayed on the LCD monitor. In a case like this, turn the power off and then turn it back on.
  When a card was ejected while it was being formatted:
  Re-format the card.
  When a card was ejected while its data was being accessed:
  Something may have gone wrong with one of the clips (page 28). Check the clips, and repair the abnormal one. (For details on repairing clips -> page 36)
- During playback, a P2 card will not be recognized even if it has been inserted into the other empty slot, and the P2 card access lamp will not light. After playback is completed, the P2 card recognition process is started.
- If the P2 card is ejected while thumbnails are displayed, the thumbnail display screen will be cleared.

Precaution for using P2 cards
P2 cards must always be formatted using a P2 device prior to use.

Concerning P2 cards

P2 card recording durations

Model number	Capacity	DVCPRO/DV Audio 2CH	DVCPRO50 Audio 4CH	DVCPRO HD*1
AJ-P2C004HG	4 GB	Approx. 16 minutes	Approx. 8 minutes	Approx. 4 minutes
AJ-P2C008HG	8 GB	Approx. 32 minutes	Approx. 16 minutes	Approx. 8 minutes
AJ-P2C016RG	16 GB	Approx. 64 minutes	Approx. 32 minutes	Approx. 16 minutes

- **AJ-P2C002SG (2 GB) cards cannot be used.**
- The memory needed for management and other purposes is included in the memory figure displayed, so the amount of memory you can use for recording is less than what is displayed.
- **Concerning dividing the clips recorded on P2 cards**
  If, when a P2 card with a memory capacity of 8 GB or more is used in this unit, the continuous recording time for a single session exceeds the time shown in the table below, the recording will automatically continue as another clip. Furthermore, when performing thumbnail operations (such as display, delete, repair or copy) for clips using the P2 device, these operations can be performed with all the clips treated as a single clip. The clips may be displayed as separate clips by non-linear editing software and PCs.

Recording format	Recording time
DVCPRO HD*1	Approx. 5 minutes
DVCPRO50	Approx. 10 minutes
DVCPRO/DV	Approx. 20 minutes

*1 720P/30PN and 720P/24PN are excluded from the DVCPRO HD formats.

- When any other kind of card is used, you may need to update the driver installed in the unit. (Page 86)

Other

Using the USER buttons

One of ten different functions can be allocated to each of USER1, 2 and 3 buttons.

USER1: SYS FORMAT
USER2: SHOT MARK
USER3: TEXT MEMO

For details, refer to the USER1-3 items (page 74) on the setting menu “SW MODE” screen.

- The function allocated to [USER] is displayed when [MENU] and [MODE] are pressed together on the thumbnail display off screen.

Charging the internal battery

The date (year/month/day) and time are stored in the memory by the internal battery. When the display has appeared on the LCD monitor screen, it means that the internal battery charge is low. Follow the steps below to charge the battery. After the battery has been fully charged, set the date and time.

1 Connect the AC adapter to the unit.
Keep the unit’s power turned off.

2 Maintain this condition for about 4 hours. The internal battery will now be charged.
After charging, check the TC and menu.

If appears even after the internal battery has been charged, the battery must be replaced. Ask your dealer for another battery.

Using SD memory cards

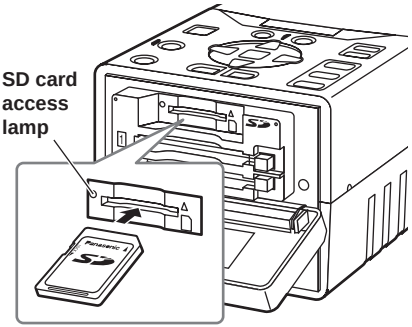
SCENE files and USER files can be saved or loaded using SD or SDHC memory cards (both types of cards will now be referred to as “SD memory cards”). (Page 27)

Inserting/ejecting SD memory cards

Insertion

1 Open the cover, and insert the card while paying attention to its direction.

2 Close the cover.



Removal

1 Open the cover, and check that the SD card access lamp is not lighted.

2 Push the card further into the unit, clasp it between your fingers, and remove.

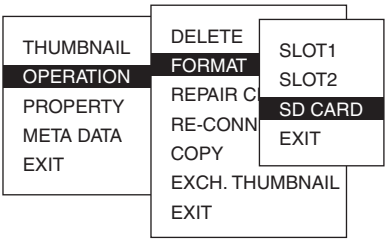
3 Close the cover.

Formatting SD memory cards

1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen now appears.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select “OPERATION” – “FORMAT” – “SD CARD”, and press [STILL].
- If the card is not going to be formatted, select EXIT.



4 Select YES on the confirmation screen, and press [STILL].
- The selected SD memory card is now formatted.

- Cards can also be formatted from the SD CARD FORMAT item on the CARD FUNCTIONS screen. (Page 77)
- With SDHC cards, 32 KB of memory will have already been used up.

Precautions for using SD memory cards

- With this unit, use SD memory cards which meet the SD standard or SDHC standard. Always remember to use this unit to format the SD memory cards. If a card must be formatted using a PC, download the special software from the support site given below. SD memory cards with the following memory sizes can be used within this unit.

SD (8 MB to 2 GB)

8 MB	16 MB	32 MB	64 MB	128 MB
256 MB	512 MB	1 GB	2 GB	

SDHC (4 GB only)

4 GB

To obtain the latest information which is not provided in these Operating Instructions, access the P2 support page on the web site below.
http://panasonic.biz/sav/

- When using the SD memory cards, always remember to close the cover.
- Also refer to “Concerning the use of memory cards” on page 89.

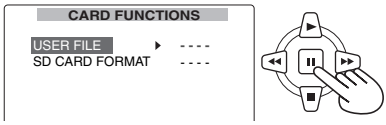
Saving USER files on SD memory cards

Up to four sets of settings can be saved as four files on the SD memory card, and they can be loaded from the card.

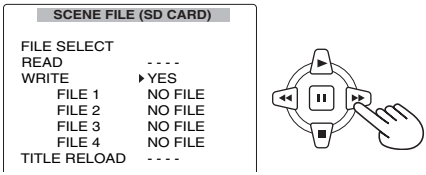
1 Press [MODE] to display the thumbnail display off screen.

2 Select “USER FILE” on the setting menu “CARD FUNCTIONS” screen, select “YES”, and press [STILL].

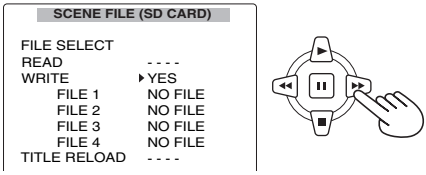
- Basic operations on the setting menus (page 70)



3 Using [FF] or [REW], select the file number (1, 2, 3 or 4).

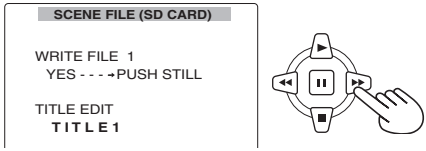


4 Using [STOP] and [PLAY], select “WRITE”, and press [STILL].



5 Display “YES” using [REW] and [PLAY], and press [STILL].

- In the figure below, “TITLE1” is the filename.
- After the data has been saved, “WRITE OK” is displayed.



6 Press [MENU] four times to release the menu mode.

To give titles to files

1) Perform steps 1 to 4.
2) Select the characters using [STOP] and [PLAY], and move to the next character using [STILL].
   - Any of the following characters can be input. (Space), A to Z, 0 to 9, : ; < = > ? @ [¥] ^ _ -. /
   - All the characters can be deleted using the unit’s [RESET] button.
3) After all the characters have been input, press [FF] at the left end of the characters (or [REW] at the right end), and press [STILL].

To re-load files from SD memory cards

1) Performs steps 1 and 2.
2) Move to [READ] using [STOP] and [PLAY], display “YES”, and press [STILL]. The files are now re-loaded.
3) If “TURN POWER OFF” appears after loading, turn off the power, and then turn it back on. The loaded files are now set.

- If “WRITE NG FORMAT ERROR” is displayed, format the SD memory card. (Page 26)
- If “WRITE NG WRITE PROTECT” is displayed, release the SD memory card protection.
- If “WRITE NG CANNOT ACCESS” is displayed, complete the other operations (such as playback), and then proceed to operate.
- If “WRITE NG ERROR” is displayed, the SD memory card may be defective. Replace the card.

Thumbnail display

The video data produced on a P2 card by a single shooting session is referred to as a clip.When the unit's power is turned on, the clips are displayed as thumbnails on the LCD monitor. (If there are many clips, it will take a few moments for all the clips to be displayed.)

Playback formats

The formats which can be played back by this unit are as follows.

DVCPRO HD

1080/60i (30P over 60i/24P over 60i/24PA over 60i) ∗
1080/50i (25P over 50i)
720/60P (30P over 60P /24P over 60P) ∗
720/30PN (native recording) ∗
720/24PN (native recording) ∗
720/50P (25P over 50P)
720/25PN (native recording)

DVCPRO50/25,DV

480/60i (30P over 60i/24P over 60i/ 24PA over 60i)
576/50i (25P over 50i)

∗24P: 23.98P; 30P: 29.97P; 60P: 59.94P; 60i: 59.94i

Switching playback formats

To play back clips with different recording formats, switch the playback format.

- The numbers of the clips which cannot be played back are displayed in red.

1 Press [MODE] to display the thumbnail display off screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL] select "RECORDING SETUP" – "SYS FORMAT", and press [STILL].

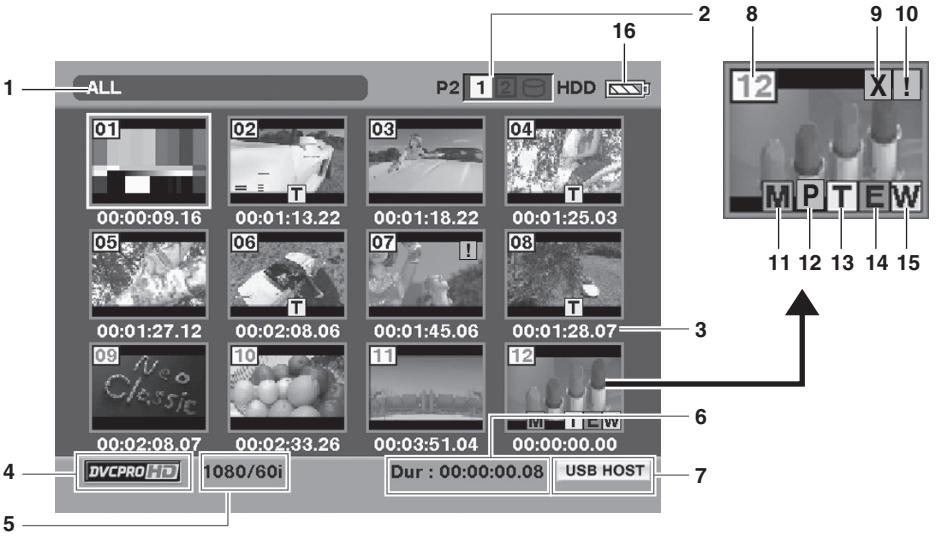
4 Select the format using [STOP] and [PLAY], and press [STILL].

5 Press [MENU] twice to exit the menu.

6 Press [MODE] to return to the thumbnail display screen.

- By allocating "SYS FORMAT" to [USER], the format can be selected on the thumbnail display screen. (Page 80)

Names and functions thumbnail display screen parts



Menu configuration of thumbnail display screen

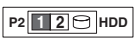
- THUMBNAIL
  - ALL CLIP
  - SAME FORMAT CLIPS
  - SELECTED CLIPS
  - MARKED CLIPS
  - TEXT MEMO CLIPS
  - SLOT CLIPS
  - SETUP
  - EXIT
- OPERATION
  - DELETE
  - FORMAT
  - REPAIR CLIP
  - RE-CONNECTION
  - COPY
  - EXCH THUMBNAIL
  - EXIT
- PROPERTY
  - CLIP PROPERTY
  - CARD STATUS
  - DEVICES
  - PROPERTY SETUP
  - SYSTEM INFO
  - EXIT
- HDD
  - EXPORT
  - EXPLORE
  - FORMAT
  - SETUP
  - EXIT

1 Display statuses

The types of information which are displayed on the screen are displayed as follows.

ALL:	All clips
SAME FORMAT:	Clip whose format is the same as the system format
SELECT:	Clip selected by the SET button
MARKER:	Clip to which the shot mark has been added
TEXT MEMO:	Clip with text memo data
SLOT n:	Clip on the P2 card in slot “n”
PROPERTY:	Detailed clip information
P2/REMAIN:	Media information (remaining memory)
P2/USED:	Media information (used memory)

2 P2 card slot numbers and hard drive statuses



The statuses of for the P2 cards and USB hard drive are displayed as follows.

1 2 (White)	The numbers of the P2 card slots where P2 cards have been inserted are displayed in white.
1 2 (Yellow)	The number of the P2 card slot , which contains a P2 card with a clip that has its cursor position recorded, is displayed in yellow. When a single clip has been recorded on a multiple number of P2 cards, all the slot numbers of the cards on which the clip is recorded will be displayed.
(Gray)	When a mode other than the USB HOST mode is established or when the USB HOST mode is established but the hard drive is not connected, this status is displayed in gray.
(White)	When the USB HOST mode is established and the hard drive can be used, this status is displayed in white.
(Yellow)	When the USB HOST mode is established and the clips on the hard drive are displayed as thumbnails, this status is displayed in yellow.
(Red)	When the USB HOST mode is established and the hard drive is in the data copy enable status, this status is displayed in red.

Names and functions of thumbnail display screen parts (continued)

3 Time display
Depending on what has been set, the time code at the clip recording start point or the user's bit at the clip recording start point, shooting time, shooting date, shooting date/time or USER CLIP NAME is displayed.

4 Recording mode
The recording mode of the clip where the pointer is positioned is displayed.

5 System format
The recording format of the clip where the pointer is positioned is displayed.

6 Duration
The duration of the clip where the pointer is positioned is displayed.

7 USB HOST mode indicator
This appears when the USB HOST mode has been selected.

8 Clip number
These are the numbers which have been set by the unit for all the correctly recognized clips on a P2 card. The numbers are allocated in sequence starting from the earliest shooting date/time. Clips which cannot be played back because, for instance, they have wrong recording formats are displayed in red.

9 X Defective clip indicator
? Defective clip indicator
This indicates clips whose recording contains problems for reasons such as the power being cut off while they were being recorded. It may be possible to repair clips which are indicated by the yellow defective clip indicator. For further details, refer to "Repairing clips" (→ page 36). It is not possible to repair clips which are indicated by the red defective clip indicator so delete them. If these clips cannot be deleted, format the P2 card. In the case of clips with the wrong formats, ? is displayed instead of X.

10 ! Incomplete clip indicator
This appears when a single clip has been recorded onto a multiple number of P2 cards and one of the P2 cards concerned has not been inserted into the P2 card slot.

11 M Shot mark indicator
This indicates clips where a shot mark has been added to their thumbnails.

12 P Clip-with-proxy indicator
This indicates clips for which a proxy has been additionally recorded.

13 T Text memo indicator
This indicates clips with text memo data.

14 E Edit-copy clip indicator
This indicates clips which have been edit-copied by the AJ-SPD850 or other model which supports the edit-copy function. For details on the edit-copy function, refer to the operating instructions of the model which supports the function.

15 W Wide indicator
This indicates clips which have been recorded using the 16:9 aspect ratio. It does not indicate clips which were formatted by a hard drive.

16 Remaining battery charge display
As the remaining charge drops, the display changes in the following sequence: , , , , , , and .
When the charge is depleted, ( ) blinks.
(While the AC adapter is being used, a display other than may appear: this is normal and not a sign of trouble.)

Changing the displays on the thumbnail display screen

You can customize the thumbnail display screen to better suit your operating needs for more efficient operation.

1 Display the thumbnail display screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select the item to be set at the lower level of "THUMBNAIL" – "SETUP", and press [STILL].

ALL CLIP:	Select this to display all the clips.
SAME FORMAT CLIPS:	Select this to display the clips whose format is the same as the recording format.
SELECTED CLIPS:	Select this to display the clips selected by the STILL button.
MARKED CLIPS:	Select this to display the clips to which shot marks have been added.
TEXT MEMO CLIPS:	Select this to display the clips with text memo data.
SLOT CLIPS:	Select this to display the clips on the P2 card of slot number "n".
EXIT	Select this to return to the previous menu.

Setting the items to be displayed

You can customize how the thumbnails are to be displayed to better suit your intended application. Switch to the indicator or data setting for the thumbnail display.

1 Display the thumbnail display screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select the item to be set at the lower level of "THUMBNAIL" – "SETUP", and press [STILL].

ALL HIDE:	ON	None of the indicators are displayed.
	OFF	The indicators are displayed in line with the settings of the menus below.
MARKER IND.:	ON	The shot mark indicator is displayed.
	OFF	The shot mark indicator is not displayed.
TEXT MEMO IND.:	ON	The text memo indicator is displayed.
	OFF	The text memo indicator is not displayed.
WIDE IND.:	ON	The wide indicator is displayed.
	OFF	The wide indicator is not displayed.
PROXY IND.:	ON	The proxy indicator is displayed.
	OFF	The proxy indicator is not displayed.
DATA DISPLAY:	This menu item enables you to select what is to be displayed in the time display (see 3 in "Names of thumbnail display screen parts and their functions").	
	TC	Time code
	UB	User's bit
	TIME	Time of recording
	DATE	Date of recording
	DATE TIME	Date/time of recording
	USER CLIP NAME	Clip name which was set by the user

DATA FORMAT:	This menu item enables you to select the format in which the date/time of the recording is to be displayed.	
	Y-M-D	Year/month/day
	M-D-Y	Month/day/year
	D-M-Y	Day/month/year
	NOTE: This setting will also be reflected in the date of the recording which is displayed as one of the clip properties, the date/time of the recording which is displayed when DATE has been selected as the DATA DISPLAY item setting, the date of the recording which is displayed by the clip information on the event property screen of playlists, and the preparation date/time of the media data loading and other file displays.	
THUMBNAIL SIZE:	This menu item enables you to select the size of the thumbnails which will be displayed on one page of the LCD monitor screen.	
	LARGE	Large size
	NORMAL	Standard size
PLAYBACK RESUME:	When the cursor was not moved from the clip where playback was stopped, this is used when next playing back a clip from its stopped position.	
	ON	Select "ON" to play back from the stop position.
	OFF	Select "OFF" to play back the clip from its beginning.
THUMBNAIL INIT:	This menu item enables you to return the above thumbnail display settings to the factory statuses (default values).	
	YES	The settings are returned to the factory statuses (default values).
	NO	The settings are not returned to the factory statuses (default values).
EXIT	Select this to return to the previous menu.	

___ The underlined settings are the factory mode settings.

Clip management

Selecting clips

When performing operations on the thumbnail display screen, select the clip which will be the target of these operations as follows.

1 Using [FF] or [REW], move the yellow frame (cursor) to the target clip.

2 Press [STILL].
A bluish-green frame now appears at the clip where the cursor is positioned to indicate that the clip has been selected.

To release the selection

1 Move the cursor to the selected clip, and press [STILL] again.
The selection is released.

- By repeating steps 1 and 2, you can select a multiple number of clips.

Deleting clips

You can delete unwanted clips from the P2 by proceeding as follows.

1 Display the thumbnail display screen.

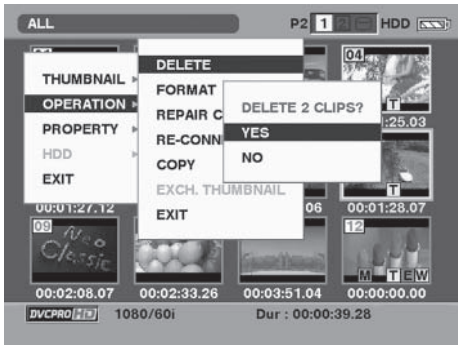
2 Select the clips to be deleted.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "DELETE", and press [STILL].

5 Select "YES", and press [STILL].

6 When the completion message has appeared, press "OK" ([STILL]).



Repairing and connecting clips

Repairing defective clips

The defective clip indicator (yellow X) appears in order to indicate that there is a problem in the clip such as the power having been suddenly cut off while it was being recorded. You can repair problem clips by proceeding as follows.

1 Display the thumbnail display screen.

2 Select the clip to be repaired.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "REPAIR CLIP", and press [STILL].

5 Select "YES", and press [STILL].

6 When the completion message has appeared, press "OK" ([STILL]).

- It is not possible to repair clips with some types of damage. These kinds of clips are identified by the red X.

Connecting incomplete clips

In some cases, clips recorded on a multiple number of P2 cards may not be recognized as a single continuous clip and may be recognized as an incomplete clip (! indicator) instead. At times like this you can use the connecting function to restore the "incomplete" clip to a continuous (originally connected) clip.

1 Display the thumbnail display screen.

2 Select the incomplete clip to be connected.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "RE-CONNECTION", and press [STILL].

5 Select "YES", and press [STILL].

6 When the completion message has appeared, press "OK" ([STILL]).

A clip is recognized as incomplete when:

- A clip recorded on a multiple number of P2 cards has been copied separately from one card and then from another or other cards.
- A clip recorded on a multiple number of cards has first been copied separately from one card and then from another or other cards onto a hard drive and then written back onto the P2 cards.
- A long clip lasting more than 5 minutes in the DVCPRO HD format (10 or so minutes in the DVCPRO50 format or 20 or so minutes in the DVCPRO DV format) has first been copied to a hard drive and then written back onto the P2 cards.

- Normally, thumbnails with the incomplete clip mark are displayed side by side.
- If only parts of incomplete clips separated into 3 or more have been connected, the incomplete clip marks will remain on the screen until all the clips which make up the original clip are connected.

Copying clips

Clips can be copied onto the P2 cards in either of the P2 card slots.

- While clips are being copied, do not turn off the power or eject the card. Otherwise, defective clips will be produced. If defective clips are produced, delete them, and copy the original clips again.
- Copy incomplete clips after having connected them.

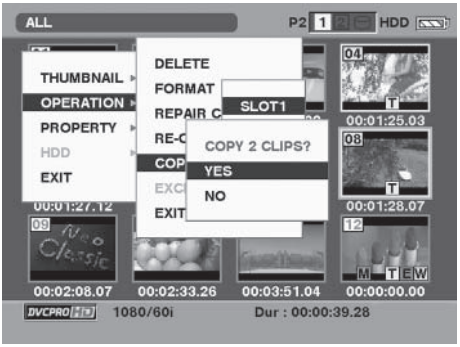
1 Display the thumbnail display screen.

2 Select the clip to be copied.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "COPY" – "SLOT n" (where "n" is the number of the P2 card slot into which the copy destination P2 card was inserted), and press [STILL].

5 Select "YES", and press [STILL].
Clip copying now starts.



- To stop the copying process at any time, press [STILL] to cancel the copying. The partially copied clip at the copy destination will be deleted.
- If there is a clip with the same GLOBAL CLIP ID--one which, for instance, was previously copied to the copy destination--OVER WRITE will appear. To overwrite the existing clip, select YES or to cancel the overwriting, select NO, and press [STILL]. (OVER WRITE also appears when copying onto the P2 card a different clip which has been recorded on a multiple number of cards.)

6 When the completion message has appeared, press "OK" ([STILL]).

Clips cannot be copied when any of the following error messages are displayed.

- "LACK OF REC CAPACITY!"
  Clips will not be copied because there is insufficient memory at the copy destination.
- "UNKNOWN CONTENTS FORMAT!"
  Clips will not be copied because the selected clips include defective clips.
- "NO COPY TO SAME CARD!"
  Clips will not be copied because an attempt is being made to copy clips to the same card.
- "TOO MANY CLIPS!"
  Clips will not be copied because too many clips have been selected.

Displaying the clip information

You can display detailed information about clips on the screen, and check it.

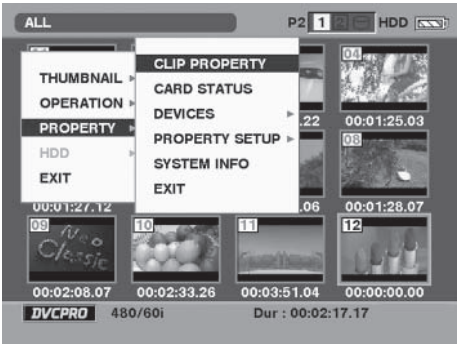
1 **Display the thumbnail display screen.**

2 **Using [FF] or [REW], move the cursor to the target clip.**

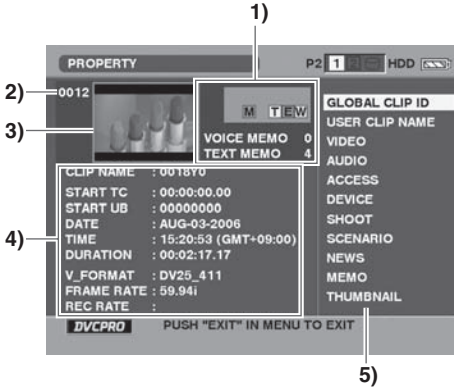
3 **Press [MENU].**

4 **Using [STOP], [PLAY] and [STILL], select “PROPERTY”, and press [STILL].**

5 **Select “CLIP PROPERTY” on the sub-menu displayed, and press [STILL].**



Information on the selected clip now appears on the screen.



1) Information added to clips
The indicators or numbers of text memos or voice memos, which have been inserted into clips, are displayed. In addition, when a P2 card on which clips have been recorded has been write-protected, the mark is displayed.

- **Voice memo indicator**
  This is displayed on clips to which voice memos have been added. It appears only in the clip property mode.
- Voice memos cannot be recorded or played back using this unit.

2) Clip number

3) Thumbnail

4) Clip information

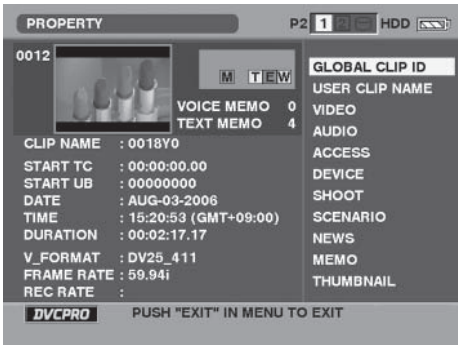
The following information is displayed.

CLIP NAME:	Clip name
START TC:	Time code when recording was started
START UB:	User's bit when recording was started
DATE:	Date on which the clip was recorded
TIME:	Time at which the clip was recorded
DURATION:	Length of the clip
V_FORMAT:	Recording format of the clip
FRAME RATE:	Playback frame rate
REC RATE:	Recording frame rate (displayed on clips specially recorded by the camera recorder)

5) Clip meta-data

Items for referencing the detailed information on the clips (clip meta-data) are displayed.

6 If necessary, reference the clip meta-data contents.



When the clip meta-data item is selected using [STOP] and [PLAY], and then [STILL] is pressed, the following information is displayed.

GLOBAL CLIP ID:	Global clip ID (a unique number which is not assigned to any other clips in the world)
USER CLIP NAME:	Clip name which can be assigned by the user Normally, the GLOBAL CLIP ID is provided as the clip name.
VIDEO:	Video signal system, etc. (frame, pull-down, aspect ratio)
AUDIO:	Audio channel system, etc. (sampling rate, bit rate)
ACCESS:	Last update date, etc. (name of the person who created the clip and date on which it was created, date on which the clip was last updated and name of the person who last updated the clip)
DEVICE:	Serial number of device used to record the clip (name of the device manufacturer, serial number, model number)
SHOOT:	Recording start and end dates, etc. (name of person who shot the clip, date on which shooting started, date on which shooting ended, shooting location information, altitude, longitude, latitude, shooting location information source, shooting location)
SCENARIO:	Program name, scene number, etc. (program name, scene number, take number)
NEWS:	Reporter, news-gathering object, etc. (reporter, purpose of news gathering, object of news gathering)
MEMO:	TEXT MEMO number, position, name, text content (no., recording position, person who input the memo, text information) • An OFFSET is indicated by the number of frames from the beginning. On a thumbnail text memo display, this OFFSET is indicated as a time code instead. • Texts consisting of up to 1,000 characters can be attached, but only the first 100 characters will actually be displayed. • The left and right cursors are used to move from one text number to another.
THUMBNAIL:	Information on the thumbnail images

7 Press [MENU], and select EXIT to exit.

Editing the clip information

You can edit the clip information.

1 **Display the thumbnail display screen.**

2 **Using [FF] or [REW], move the cursor to the target clip.**

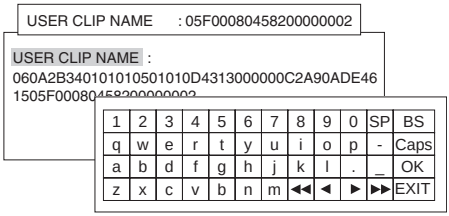
3 **Press [MENU].**

4 **Using [STOP], [PLAY] and [STILL], select “PROPERTY” – “CLIP PROPERTY”, and press [STILL].**
- The clip information is displayed.

5 **Using [STOP] and [PLAY], select the item to be edited, and press [STILL].**

6 **The window of the item to be edited now appears. Select the item name using [STOP], and then press [STILL].**

7 **The editing keyboard window now appears. Using [FF], [REW] and [STOP], select the keys, and while entering them using [STILL], edit the information.**



8 **Select “OK” and press [STILL] to exit the editing.**

9 **Press [MENU], and select “EXIT” to exit.**

You can edit the following information.

USER CLIP NAME			This displays the name of the clip which has been set by the user; the global clip ID is set as the default value.
ACCESS	CREATOR		Name of the person who did the recording
SHOOT	SHOOTER		Name of the person who did the shooting
	LOCATION	ALTITUDE	Altitude of the shooting location
		LONGITUDE	Longitude of the shooting location
		LATITUDE	Latitude of the shooting location
	PLACE NAME		Place name
SCENARIO	PROGRAM NAME		Program name
	SCENE NO		Scene number
	TAKE NO		Take number
NEWS	REPORTER		Name of the reporter
	PURPOSE		Purpose of the news gathering
	OBJECT		Object of the news gathering
MEMO	PERSON		Name of the person who recorded the text memo which was added to the clip
	TEXT		Content of the text memo

Inserting shot marks into clips

You can differentiate one clip from all the other clips by inserting shot marks.

1 Display the thumbnail display screen.

2 Using [FF] or [REW], move the cursor to the target clip.

3 Press [USER] in which the shot mark function was allocated. (page 25)

To release a shot mark, repeat the above steps.

- If the video data created by a shooting session consists of a multiple number of clips, it will not be possible to set or release the shot marks unless all the P2 cards containing the video data are inserted into the slots.
- Shot marks cannot be inserted into the clips on a card whose write protect switch is at the PROTECT position.

Displaying the P2 card status

The statuses of the P2 card slots, operation statuses of the P2 cards and other card information can be displayed on the screen, and checked.

1 Display the thumbnail display screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select "PROPERTY" – "PROPERTY SETUP" – "P2 CARD CAP", and press [STILL].

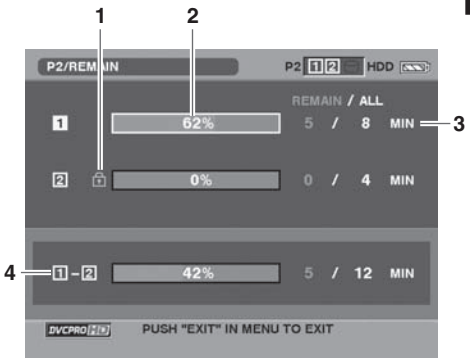
4 Use [STOP] and [PLAY] to select the item to be set, and press [STILL].

REMAIN:	Remaining memory display (default value)
USED:	Used memory display

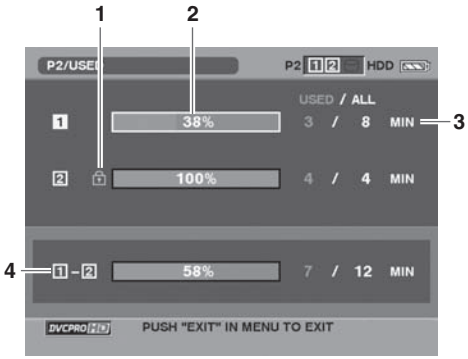
5 Press [MENU].

6 Using [STOP], [PLAY] and [STILL], select "PROPERTY" – "CARD STATUS", and press [STILL].

[When REMAIN has been selected]



[When USED has been selected]



7 Press [MENU] - [EXIT] to exit the procedure.

Displaying the P2 card status (continued)

1) Write-protect mark

The mark is displayed when a P2 card is write-protected.

2) P2 card status

With the remaining memory display, the P2 card's remaining memory is indicated using a meter and as a percentage. With the used memory display, the P2 card's used memory is indicated using a meter and as a percentage. Depending on the status of the card, one of the following messages may be displayed.

FORMAT ERROR:	An unformatted P2 card has been inserted.
NOT SUPPORTED:	A card which is not supported by the unit has been inserted.
NO CARD:	A P2 card has not been inserted.

3) P2 card remaining memory (or used memory) and total memory

The remaining memory (or used memory) and total memory of the P2 card are converted into minutes and displayed. Fractions of a minute are discarded so that the total of the remaining memory (or used memory) on each P2 card may not exactly correspond to the total memory.

4) Slot remaining memory (or used memory) total

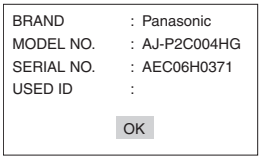
A figure representing the total for the remaining memory (or used memory) of the cards in the two P2 card slots is displayed.

- The free memory of a write-protected P2 card is not included in the total free memory.

5) P2 card details display

When the cursor is moved to the slot whose P2 card status is displayed and [STILL] is pressed, the model number of the P2 card and other detailed information on the card will be displayed. When [STILL] is pressed again, the detailed information is cleared.

The card statuses are displayed as follows.



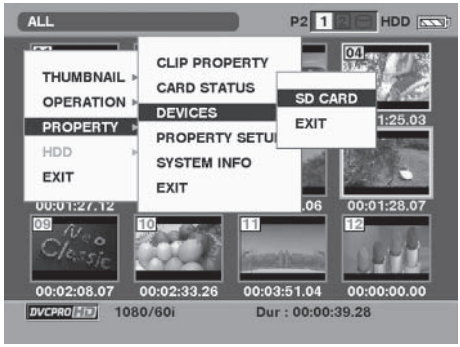
Displaying the SD memory card information

You can display the usage statuses of the SD memory cards on the screen, and check them.

1 Display the thumbnail display screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select "PROPERTY" – "DEVICES" – "SD CARD", and press [STILL].
The following information is displayed.



SD STANDARD:	Whether the SD memory card has been formatted in compliance with the SD standard is displayed.
	SUPPORTED: The card format complies with the SD standard.
	NOT SUPPORTED: The card format does not comply with the SD standard.
USED:	Used memory [bytes]
BLANK:	Free memory [bytes]
TOTAL:	Total memory [bytes]
NUMBER OF CLIPS:	Number of clips contained on the SD memory card when the clips were copied onto an SD memory card with a proxy or P2 camera-recorder
PROTECT:	Write – protect status

- Proxy recording is not possible with this unit.

4 Press "OK" ([STILL]).

5 Press [MENU] to exit the procedure.

Clip playback

Playing back clips

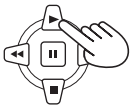
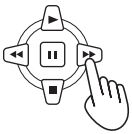
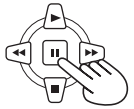
1 Display the thumbnail display screen.

2 Using [FF] or [REW], move the yellow frame (cursor) to the target clip.

3 Press [PLAY].

Playback starts from the clip where the cursor is positioned. When this clip has finished playing back, the subsequent clips with the same playback format are played back in turn, and when the last clip has been played back, the thumbnail screen is restored.

- When playing back a clip, there is no need to select it (provided that the bluish-green frame is displayed on the thumbnail).
- Clips where the red defective clip indicator X (page 30) is displayed cannot be played back.
- By changing the thumbnail display setting, you can play back only the clips you have selected, or play back only the clips in which text memos have been inserted, for instance.

Basic playback operations	
	**Play (▶)** When this button is pressed during stop, playback begins from the start of the selected clips. When it is pressed during playback, the variable speed search mode (page 43) is set, and the clips are played back at the 1x speed.
	**Rapid forward playback (▶▶)** When this button is pressed during playback, the clip currently selected is played rapidly in the forward direction (at 4x normal speed). When the thumbnail image is released, this type of playback is possible even during stop. If the button is held down, the playback speed is increased (to 32x normal speed). When it is pressed during pause, the next clip is selected for playback.
	Rapid reverse playback (◀◀) When this button is pressed during playback, the clip currently selected is played rapidly in the forward direction (at 4x normal speed). When the thumbnail image is released, this type of playback is possible even during stop. If the button is held down, the playback speed is increased (to 32x normal speed). When it is pressed during pause, the previous clip is selected for playback.
	Stop (■)
	**Pause (❚❚)** When this button is pressed again, playback is resumed.

Variable-speed searches

You can change the playback speed and search for specific locations.

1 **Press [PLAY] during playback.**
1X ▷ is displayed.

2 **Press [PAGE/AUDIO MON/VAR], and change the playback speed.**
X ▷ /X ▷▷ or X ◁ /X ◁◁ is displayed.
- Each time the button is pressed, the playback speed changes by one setting in the following sequence: 1/5x, 1x, 2x, 4x, 12x and 24x. No sound will be played back at the 12x or 24x speed.
- Use the "+" to change the speed in the forward direction, and the "-" to change it in the reverse direction.

To return to normal playback, press the [PLAY].

Clip forward/reverse

1 **Press [STILL] during playback to establish the pause mode.**

2 **Press [FF] or [REW].**
CLIP ▯▯▷ or CLIP ◁▯▯ is displayed.

Rapid forward/rapid reverse playback

1 **During playback, press [FF] or [REW].**
The clip is played back rapidly at 4x normal speed in the forward or reverse direction. When the button is held down, the speed increases (to 32x normal speed).
▷▷ Alternatively, ◁◁ is displayed.

To return to normal playback, press the [PLAY].

Frame feed playback

1 **Press [STILL] during playback to establish the pause mode.**

2 **Press [PAGE/AUDIO MON/VAR].**
- The clips are fed frame by frame in the forward direction using "+" and in the reverse direction using "-".
▯▯▷Alternatively, ◁▯▯ is displayed.
- When the button is held down, frame feeding is continued.

To return to normal playback, press [PLAY].

Repeat playback

The selected clip is played repeatedly.

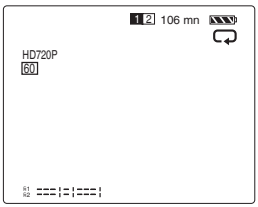
1 **Display the thumbnail display screen.**

2 **Press [MODE] to display the thumbnail display off screen.**

3 **Press [MENU].**

4 **Using [STOP], [PLAY] and [STILL],select "PLAYBACK FUNCTION" – "REPEAT PLAY" – "ON", and press [STILL].**

5 **Press [MENU] twice.**
The repeat playback icon is displayed on the thumbnail display off screen.



6 **Press [MODE] to display the thumbnail display screen.**

7 **Using [FF] or [REW], move the yellow frame (cursor) to the repeat playback clip, and press [STILL].**

8 **Press [MENU].**

9 **Using [STOP], [PLAY] and [STILL], select "THUMBNAIL" – "SELECTED CLIPS", and press [STILL].**

10 **Press [PLAY].**
The selected clip is now played back repeatedly.

- If a clip has not been selected, all the currently displayed clips which can be played back will be played back repeatedly.
- To turn off the repeat playback setting, select "OFF" in step 4.

Playback from text memo position

1 **Display the thumbnail display screen.**

2 **Press [MENU].**

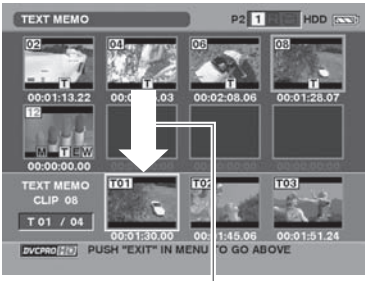
3 **Using [STOP], [PLAY] and [STILL], select “THUMBNAIL” – “TEXT MEMO CLIPS”, and press [STILL].**
Thumbnails of the clips to which text memos were added now appear at the top of the LCD monitor screen. Information on the text memo of the clip selected by the pointer appears at the bottom of the LCD monitor screen.

Thumbnail display area

Indicated here are the still images associated with the text memos.

Indicated here is the total number of text memos which were added to the clips.

4 **Using [FF] and [REW], move the cursor to the clip which is to be played back, and press [STILL].**
The cursor moves to the bottom of the LCD monitor screen.



The cursor moves here.

5 **Using [FF] or [REW], move the cursor to the time stamp number to be played back, and press [PLAY].**
Playback starts from the time code position of the text memo where the cursor is positioned. When playback ends at the end of the clip, the thumbnail screen is restored, and the cursor returns to the time code position where playback was started.

6 **Press [MENU], and then select “EXIT” using [STOP], [PLAY] and [STILL].**
The cursor returns to the top of the thumbnail screen.

Deleting text memos

1 Proceed with steps 1 to 4 in "Playback from text memo positions," and select the text memos in the clips.

2 Move the cursor to the text memo to be deleted, and press [STILL].

3 Press [MENU], and then select "OPERATION" – "DELETE" using [STOP], [PLAY] and [STILL].

4 Select "YES", and press [STILL].
The text memo is now deleted.

Dividing and copying clips using text memos

1 Proceed with steps 1 to 4 in "Playback from text memo positions," and select the text memos in the clips.

2 Move the cursor to the text memo to be copied, and press [STILL].
A multiple number of text memos can be selected.

3 Press [MENU], and then select "OPERATION" – "COPY" using [STOP], [PLAY] and [STILL].

4 Using [FF] or [REW] and [STILL], select the slot with the copy destination card, select "YES", and press [STILL].
Copying is now executed.

- The block between the selected text memo and the next text memo is copied. If there is no text memo to follow the selected text memo, the selected block will be copied.
- While copying is underway, the progress made in copying and cancel are displayed. To stop the copying at any time, press [STILL]. The "YES/NO" confirmation screen now appears. Using [STOP] and [STILL], select "YES".

Replacing thumbnail images

The thumbnail display images of the clips to which text memos were added at the top of the LCD monitor screen can be replaced with still images to which the time stamps were added at the bottom of the screen.

1 Proceed with steps 1 to 4 in "Playback from text memo positions."

2 Using [FF] or [REW], move the cursor to the still image to which the time stamp number has been added and whose thumbnail is displayed, and press [MENU].

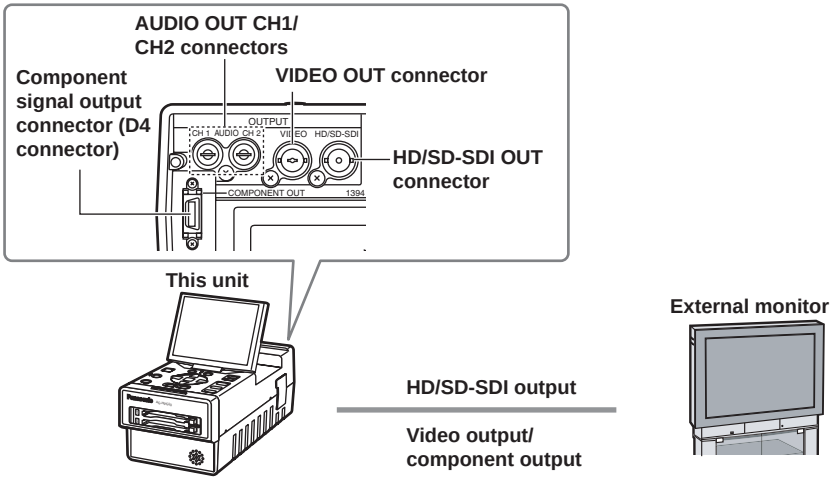
3 Using [STOP], [PLAY] and [STILL], select "OPERATION" – "EXCH. THUMBNAIL", and press [STILL].

4 Select "YES", and press [STILL].
The thumbnail display is replaced with the selected still image.

- You can view the thumbnail change position (number of frames from the start) using the clip information display "THUMBNAIL" item (page 37). 0 is normally displayed for the thumbnail of the start frame.
- Playback from a thumbnail begins from the start of the clip even when the thumbnail has been changed.

Outputting images to an external monitor for playback

You can connect an external monitor to the output connector of the unit, output clips to the external monitor and play them back on the monitor.



Setting the outputs

1 **Hold down [POWER] for at least 2 seconds to turn the power on.**

2 **Press [MODE].**
The thumbnail display off screen appears.

3 **Press [MENU].**

4 **Using [STOP] and [PLAY], select “AV OUT SEUP” setting item, and press [STILL].**

5 **Using [STOP] and [PLAY], select item, and press [STILL].**

6 **Press [MENU] to end the procedure.**

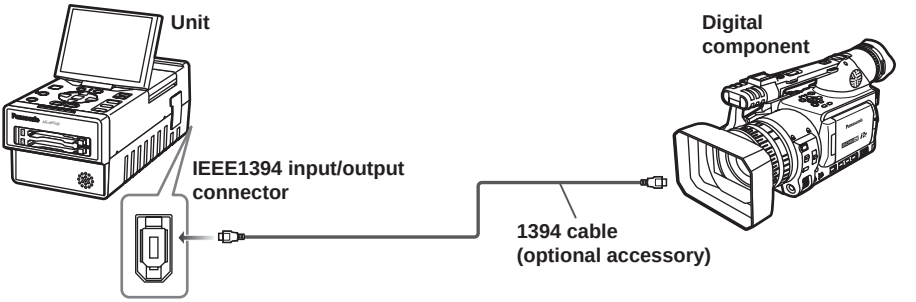
CMPNT/SDI SEL :	This is used to set the format of the D connector output and HD/SD-SDI output signals.	
(When SYSTEM FREQ is set to 59.94 Hz)	AUTO	Signals are output in the format in which they were recorded.
	1080i	720p signals are cross-converted to 1080i signals, and output.
	480i	480i format signals are output; 720p/1080i signals are down-converted to 480i and output.
(When SYSTEM FREQ is set to 50 Hz)	AUTO	Signals are output in the format in which they were recorded.
	1080i	720p signals are cross-converted to 1080i signals, and output.
	576i	576i format signals are output; 720p/1080i signals are down-converted to 576i and output.
SDI OUT	ON	SDI signals are output.
	OFF	SDI signals are not output.
SDI METADATA	ON	The meta-data is superimposed onto the HD-SDI signals.
	OFF	The meta-data is not superimposed onto the HD-SDI signals.
SDI EDH	ON	EDH is superimposed onto the SD-SDI signals.
	OFF	EDH is not superimposed onto the SD-SDI signals.
SET UP	This is used to set the setup level for NTSC output during down-conversion. • This item is not displayed on the menu when SYS TEM FREQ is set to 59.94 Hz.	
	0%	
	7.5%A	

The HD/SD-SDI output signals comply with the following standards.
HD : SMPTE 292M, 296M, 299M
SD : SD: SMPTE259M-C (480/59.94i), ITU-R BT. 656-4 (576/50i)

Recording data on P2 cards

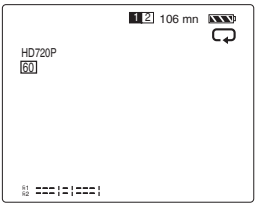
1394 input recording

You can connect a digital video component equipped with a 1394 connector, and digitally record video signals, audio signals or time codes, etc. on the unit.



1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen appears.

2 Press [MODE].
The thumbnail display off screen appears.



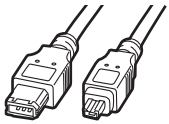
3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select the “RECORDING SETUP” – “SYS FORMAT” setting, press [STILL], and ensure that the 1394 video input image format and the unit’s recording format are the same.
For details, refer to setting menu “RECORDING SETUP” screen (page 72).

5 As in step 4, after selecting “RECORDING SETUP” using [STOP] and [STILL], set the time code, user’s bit and so on.
For details, refer to setting menu “RECORDING SETUP” screen (page 72).

6 Press the two [REC] buttons together.
Recording now starts.
- To stop the recording, press [STOP].
- While recording is underway, text memos or shot marks assigned to [USER] (page 74) can be inserted.

- Before connecting or disconnecting the 1394 cable, you must turn off the power of the component connected to the unit.
- When connecting the unit to a component which uses a 6-pin type of 1394 connector, thoroughly check the 1394 cable and shapes of the connectors at its ends before initiating the connection. Connecting the cable the wrong way round may result in damaging the unit's inside parts and trouble. Also connect the 1394 cable to the component equipped with the 6-pin connector first.



6-pin type of connector **4-pin type of connector**

- Before recording signals from an external device, check that video signals are being input.
- While signals from an external device are being recorded, do not stop the signal output at the external device or disconnect the device's cable. Otherwise, the device may not be recognized when recording is undertaken again.
- While signals from an external device are being recorded, do not change the format of the signals which are being output from the external device. Otherwise, it will not be possible for the signals to be recorded properly.
- Once the 1394 cable has been connected to the 1394 connector, do not subject the connector to heavy external loads. Doing so may damage the connector.
- When recording signals from external devices, no guarantees are made concerning the playback images. (This function is provided solely for monitoring the images.)
- The automatic video recording function on a DVD component may not work properly. If this is the case, record the images manually.

2-slot continuous recording

If P2 cards have been inserted into both of the P2 card slots, you can continuously record images first on one card and then on the other. While images are being recorded on one card, you can replace the other card with a fresh card and in this way record continuously onto 3 or more cards. (This is called hot swap recording.) However, the fresh P2 card may not be recognized when it is inserted into the empty slot at certain timings (Before and after when recording continuously from one slot to the other). It is recommended that you insert a fresh P2 card while the card on which images are being recorded still has at least one minute of remaining memory. When "SLOT SEL" is assigned to [USER] using the "USER" item (page 74) on the "SW MODE" screen, you can change the slot targeted for recording at the touch of a button.

- Changing slots is not possible while recording is in progress, so do this in the recording standby status.
- The unit does not support hot swap playback.

Time code displays

You can change what is displayed in the time code display area.

1 Press [COUNTER].

Each time the button is pressed, the data changes as follows.

TCG/TCR :	Time code displays
UBG/UBR :	User's bit value
COUNTER :	Counter display (this appears only during 1394 input recording)
FR :	Frame rate information
No display:	No data displayed

- The thumbnail screen appears or, during playback, there is no display.

Resetting the counter value

On the thumbnail display off screen, press [RESET] while the counter value is displayed.

Waveform monitor displays

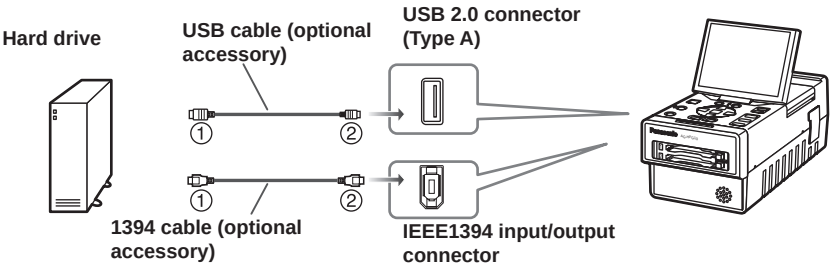
You can display the simplified waveform monitor on the recording-in-progress screen, and monitor the images being recorded, for instance.

The monitor can be displayed when the "WFM" item on the setting menu "DISPLAY SETUP" screen is set.

- When "WFM" is assigned to [USER] using the "USER" item (page 74) on the "SW MODE" screen, the selected setting will change in sequence from "WAVE" to "VECTOR" and then to "OFF" each time [USER] is pressed.
- The monitor will not be displayed during playback in the "USB HOST" mode.

Copying data from P2 cards to the hard drive

You can connect a hard drive equipped with a USB 2.0 or 1394 connector, and copy data from P2 cards onto the hard drive.



The following conditions must be met when using a USB connection.

- The PC with the hard drive must run Windows 2000 or Windows XP.
- The USB dedicated driver (provided on the CD-ROM supplied) must be installed.
- USB 2.0 (High Speed, Mass Storage Class) must be supported (neither USB 1.1 nor USB 2.0 (Full Speed or Low Speed) is supported).
- Only one PC must be connected.
- Operation will not be possible if a hub or other device is connected between the unit and PC. A USB cable more than 3 meters long must not be used. Otherwise, malfunctioning may occur.
- No guarantees are made for the operations performed by the Macintosh operating system.

The following conditions must be met when using a 1394 connection.

- The Apple machine must run Apple MacOSX10.2.7 or above.
- The Apple machine must support 1394.a (SBP2 protocol).
- No guarantees are made for the operations performed by the Windows operating system.
- Only one PC must be connected.
- Operation will not be possible if a hub or other device is connected between the unit and PC.

- Use a hard drive which meets the following conditions.
  1) The hard drive may be formatted for use with the unit.
  2) The hard drive must be used within its guaranteed operating ranges (temperature, etc.).
  3) The hard drive must not be installed where it will be susceptible to vibration or be unstable.
- In the case of some hard drives, the intended operations may not be performed properly.
- A hard drive with a SATA (serial ATA) or PATA (parallel ATA) interface connected through a USB conversion cable may not be recognized.
- While formatting or copying is in progress, do not disconnect the cables, eject the P2 cards or turn off the power of the unit or hard drive. Such actions will require the power to be turned on again.
- A hard drive is a high-precision device: as such, when it is used under certain conditions, it may quite possibly fail to read or write data.
  Matsushita Electric Industrial Co. disclaims all liability for the loss of data caused by a failure of or any form of trouble occurring in the hard drive, and also for any direct and indirect damages suffered as a result of such failure or trouble. Users are asked to bear this in mind.
- When the hard drive used for copying data from the unit has been replaced by a PC or other device, no guarantees can be made for the subsequent operations involving the unit or for the data on the hard drive.
- It is recommended that you repair P2 cards containing defective clips* before copying their data using the unit.

  ∗A “defective clip” is a clip with some kind of problem in its recording which was caused because a P2 card was ejected or the power was turned off while its recording was still in progress, and it is indicated by the X mark when the thumbnail screen is displayed by a P2 camera recorder or other device.

Copying data from P2 cards to the hard drive (USB HOST mode)

Switching to the USB HOST mode

1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen now appears.

2 Press [MODE] to display the thumbnail display off screen.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OTHER FUNCTIONS" – "PC MODE", and press [STILL].

5 Using [STOP] and [PLAY], select "USBHOST", and press [STILL].

6 Press [MENU] twice to display the thumbnail display off screen.

7 Press [MODE] to display the thumbnail display screen.

8 Hold down [MODE] for at least 2 seconds.
The USB HOST mode is now established, and "USBHOST" appears at the bottom of the thumbnail screen.

To exit the HOST mode

1 Hold down [POWER] for at least 2 seconds to turn off the unit's power.
The PC mode cannot be released simply by holding down [MODE].
- While files are being transferred, the power will not be turned off even when [POWER] is pressed.

Usable hard drives

The following hard drive can be used.
- Panasonic portable hard disk unit for P2 Store (AJ-PCS060G)
- Any hard drive which can be connected using USB 2.0

- USB bus power (5 V, 0.5 A) is also supported, but some hard drives cannot be started up using it. If this is the case, supply power from a separate source to the hard drive.
- Hard drives with a memory size of 2 TB or more are not supported.

Types of hard drives and usable functions

The functions that can be used differ from one hard drive to another. The hard drive type is displayed following [PARTITION:] on the left of the Explorer screen in the unit's HOST mode.

Hard drive type	Features	Functions that can be used
TYPE S	This is a special format for writing and reading all the data on one card at a time at high speed. This is the format used when a hard drive is formatted by the unit.	Writing and reading all the data on one card at a time, thumbnail displays, reading data one clip at a time, formatting
P2STORE	This refers to the P2 Store (AJ-PCS060G) hard drive. It cannot be used to write data.	Reading all the data on one card at a time, thumbnail displays, reading data one clip at a time
FAT	FAT16 or FAT32 is the first basic partition on a PC, etc., and the [CONTENTS] directory must be in the root directory of this partition.	Thumbnail displays, reading data one clip at a time, formatting ∗ After this drive has been formatted by the unit, it is treated as a "TYPE S" drive.
OTHER	All other types of hard drives ∗ This applies when the [CONTENTS] directory is not in the root directory or a file system other than FAT16 and FAT32, such as NTFS, is used.	Formatting ∗ After this drive has been formatted by the unit, it is treated as a "TYPE S" drive.

Formatting the hard drive

Formatting initializes the hard drive to a format which can be used by TYPE S.

• Bear in mind that when the hard drive is formatted, all the existing data on that drive will be erased.

1 Switch to the USB HOST mode.

2 Connect the USB hard drive.

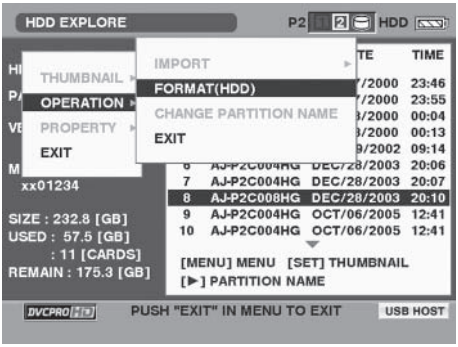
3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select “HDD” – “EXPLORE”, and press [STILL].
The Explorer screen is opened.

5 Press [MENU], select “OPERATION” – “FORMAT (HDD)” using [STOP], [PLAY] and [STILL], and press [STILL].

6 Select “YES”, and press [STILL].

7 When the confirmation message appears again, select “YES”, and press [STILL].
The hard drive is now formatted.



Exporting data to a hard drive in 1-card increments

If you are using a TYPE S hard drive, you can export all the data on one P2 card at a time to the hard drive (write data from P2 cards onto the hard drive). Before proceeding, use the unit to format the hard drive. The data of up to 23 cards can be stored on the hard drive. The computer or other device used will recognize each P2 card from which the data is exported to be a separate drive.

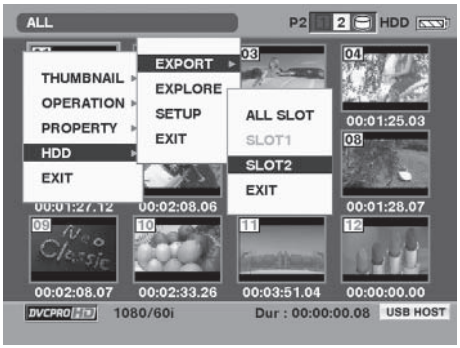
1 Switch to the USB HOST mode.

2 Connect the USB hard drive.
Format the hard drive if it has not already been formatted by the unit.
Refer to “Formatting the hard drive.”

3 Insert the P2 card.

4 Press [MENU].

5 Using [STOP], [PLAY] and [STILL], select “HDD” – “EXPORT”, and press [STILL].

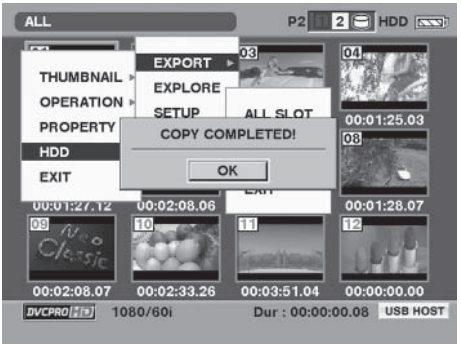


6 Select the number of the P2 card slot where the P2 copy source card was inserted, and press [STILL].

7 Select “YES”, and press [STILL].

- A progress bar is displayed while the data is being exported.
- To stop exporting the data at any time, press the [STILL], move the cursor to “YES” on the “CANCEL” confirmation display, and press [STILL].
- It will take less time for the exporting to be completed if you set it up so that verification of the two sets of data is not required during exporting. To do this, set the menu “HDD” – “SETUP” – “VERIFY” to “OFF”.
- The copying of the P2 card data will also be terminated if the process is aborted during verification of the two sets of data.

When the exporting is completed, “COPY COMPLETED!” appears on the screen.



Hard drive data display

You can display the hard drive information.

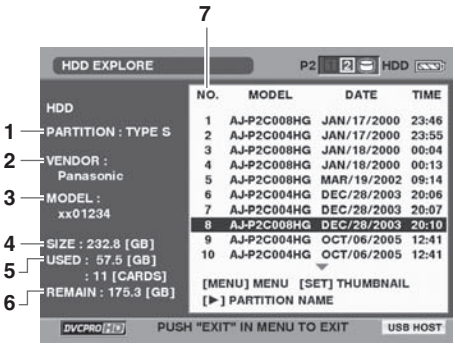
1 Switch to the USB HOST mode.

2 Connect the USB hard drive.

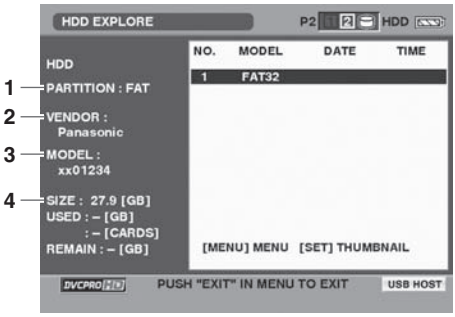
3 Press [MENU].

4 Using [STOP] and [PLAY]and [STILL], select "HDD" – "EXPLORE", and press [STILL].
The hard drive information is displayed.

With a TYPE S or P2 STORE hard drive



With FAT



1.	PARTITION	Type of hard drive
2.	VENDER	Name of vender
3.	MODEL	Hard drive model name
4.	SIZE	Total memory size of hard drive
5.	USED	Amount of hard drive memory used (unit: GB) and area of P2 card used (unit: cards)
6.	REMAIN	Remaining hard drive memory (unit: GB)
7.	Partition number	Partition (unit equivalent to one P2 card) number inside hard drive

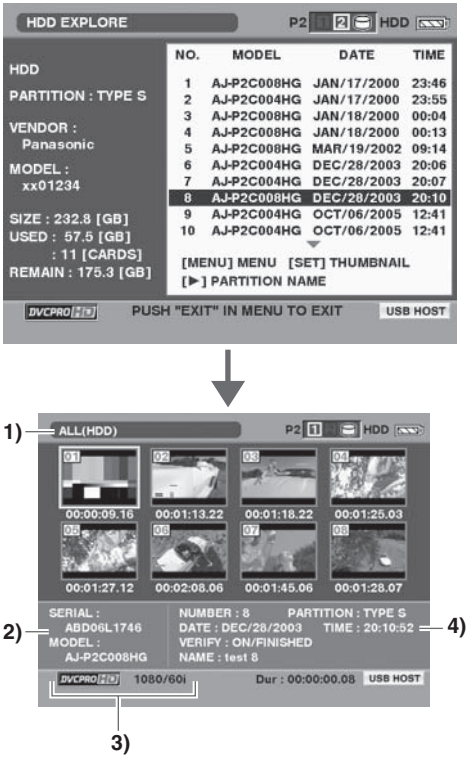
- Using [FF] and [REW], you can switch the display between the list with the dates/times and the names of the partitions given by the user.
- While the thumbnail display of the hard drive is on the screen, press [MENU], and select "OPERATION" – "CHANGE PARTITION NAME". You can now give a name (consisting of up to 20 characters) to the partition.

Thumbnail displays of clips on the hard drive

You can also display and manage thumbnails of the clips stored on the hard drive just as you can with clips on the P2 cards installed in the unit.

1 Display the Explorer screen.

2 Using [STOP] and [PLAY], select the partition to be displayed, and press [STILL].
The clips of the partition are now displayed as thumbnails.



1) Display statuses
Display the thumbnail display status of the hard drive clips.

2) Partition information
The following information is displayed.

SERIAL:	Serial number of P2 card
MODEL:	Model name of P2 card
NUMBER (NO.):	Partition number (starting from 1)
DATE/ TIME:	Partition recording date/time
VERIFY:	Setting for verifying during recording, and verifying results

ON : FINISHED	The two sets of data have been verified and found to match.
ON : FAILED	The two sets of data have been verified and found not to match.
OFF	The two sets of data were not verified.

∗ "– –" is displayed in the case of a P2 store hard drive.

3) Recording mode and system format
The recording mode of the clip at the cursor position and system format are displayed.

4) Disk information
For details, refer to the previous page.

- When the menu is displayed and "EXIT" is selected, the Explorer screen is restored.
- If necessary, you can change the displays on the thumbnail screen. The steps taken to do this are the same as for the thumbnail displays for cards. Refer to "Changing the displays on the thumbnail display screen."
- Even with a FAT type of hard drive, clips after the first thousand clips will not be displayed.
- Using [PAGE/AUDIO MON/VAR], you can move operation to the thumbnail displays of the previous or next partition.

Displaying the clip information

You can display the meta-data of the clips stored on the hard drive. This information is the same as the properties of the clips on the P2 cards.

1 Select the target clip on the thumbnail screen of the hard drive.
You can display detailed information about clips on the screen, and check it.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select "PROPERTY" – "CLIP PROPERTY", and press [STILL].
For details, refer to "Displaying the clip information."

Importing data from a hard drive to P2 cards

Importing clips one partition at a time from a TYPE S or P2 Store hard drive

You can import data (load data from the hard drive to a P2 card) at high speed one partition at a time (one card at a time) onto a P2 card of the same size as the original card.

1 **Insert the P2 card that will serve as the import destination.**

2 **Display the P2 thumbnail screen.**

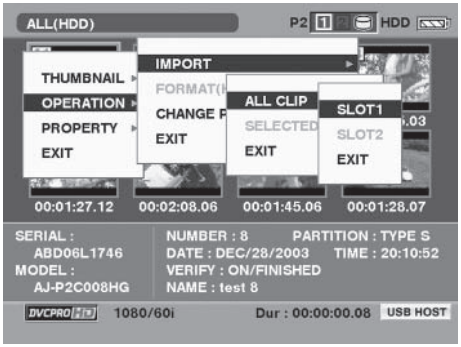
3 **Press the [MENU] button.**

4 **Using [STOP], [PLAY] and [STILL], select "HDD" – "EXPLORE", and press [STILL].**

5 **Using [STOP] and [PLAY], select the copy source partition, and press [STILL].**

6 **Press [MENU].**

7 **Using [STOP], [PLAY] and [STILL], select "OPERATION" – "IMPORT" – "ALL CLIP", and press [STILL].**



8 **Move the cursor to the number of the P2 card slot which serves as the import destination and which contains a formatted P2 card, and press [STILL].**

9 **Select "YES", and press [STILL].**
Importing now begins.
When importing is completed, "COPY COMPLETED!" appears on the screen.

- When data has been imported to a P2 card which is different from the source P2 card, some clips may be incomplete (in which case, they will be indicated by the [!] indicator). If this is the case, use the connecting function to reconfigure these clips. Refer to "Connecting incomplete clips".
- Using a menu setting, you can choose whether to verify the two sets of data when copying.

Importing one clip at a time to a P2 card

You can select the hard drive clips, and import them onto a P2 card.

1 **Insert the P2 card that will serve as the import destination.**

2 **Display the thumbnail screen of the hard drive.**

3 **Press [MENU].**

4 **Using [STOP], [PLAY] and [STILL], select "HDD" – "EXPLORE", and press [STILL].**

5 **Using [STOP] and [PLAY], select the copy source partition, and press [STILL].**

6 **Select the clip to be copied.**

7 **Press [MENU].**

8 **Using [STOP], [PLAY] and [STILL], select "OPERATION" – "IMPORT" – "SELECTED CLIP", and press [STILL].**

9 **Using [STOP] and [PLAY], select the number of the P2 card slot whose data is to be imported, and press [STILL].**

10 **Select "YES", and press [STILL].**
Importing now begins. When importing is completed, "COPY COMPLETED!" appears on the screen.

- Verifying is not executed when importing one clip at a time.
- The operation involved in importing one clip at a time is similar to copying the clips.
For the precautions to be observed when importing one clip at a time, refer to "Copying clips."

Copying data from P2 cards to the hard drive (1394 HOST mode)

Switching to the 1394 HOST mode

1 Turn on the power of the hard drive (which supports 1394. a SBP2) to be connected, connect it to the unit using the IEEE1394 cable, and hold down [POWER] on the unit for at least 2 seconds to turn on its power.
The thumbnail screen now appears.

2 Press [MODE] to display the thumbnail display off screen.

3 Press [MENU].

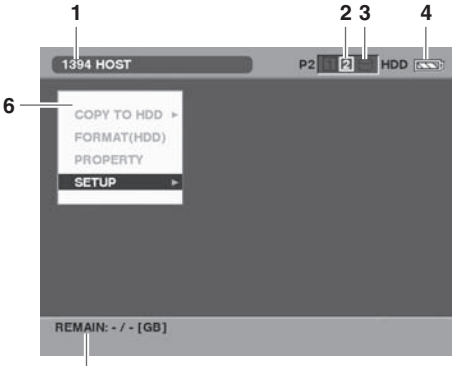
4 Using [STOP], [PLAY] and [STILL], select "OTHER FUNCTIONS" – "PC MODE", and press [STILL].

5 Using [STOP] and [PLAY], select "1394 HOST", and press [STILL].

6 Press [MENU] twice to display the thumbnail display off screen.

7 Press [MODE] to display the thumbnail display screen.

8 Hold down [MODE] for at least 2 seconds.
The 1394 HOST mode screen now appears.



1.	Mode display	1394 HOST mode is displayed here.
2.	P2 card slot number	The numbers of the P2 card slots where P2 cards have been inserted are displayed in white.
3.	Hard drive status display	The status is displayed in white if the hard drive is connected and can be used, in black when it is not connected, and in red when data cannot be copied because of its formatting or other reasons. If you plan to copy data onto a hard drive indicated in red, format the hard drive first.
4.	Remaining battery charge	The remaining battery charge is displayed here.
5.	Remaining hard drive memory display	The remaining memory and total memory of the hard drive are displayed here. "-/-" indicates that the hard drive is not connected.
6.	Menu display	The menu used in the 1394 HOST mode is displayed here.

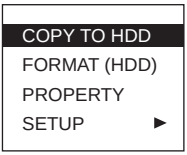
- Connect the unit and the hard drive using the 1394 cable. Do not connect (using a chain or hub, for instance) a multiple number of hard drives even if no power is being supplied (to the chain or hub).

Formatting the hard drive

1 Using [STOP] and [PLAY], select "FORMAT (HDD)", and press [STILL].
Then select "YES" using [STOP], and press [STILL]. Formatting now begins. (Formatting will be completed in about 2 or 3 seconds.)

2 Select YES, and press [STILL].

3 When the confirmation message appears again, select "YES", and press [STILL].

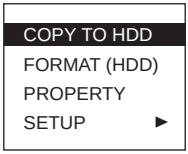


Formatting now begins.
- Bear in mind that all the data will be erased on the hard drive being formatted.

Copying data from P2 cards to the hard drive

- Use a hard drive with enough memory to accommodate the data to be copied.
- Proceed with copying after checking that the unit has a sufficient remaining battery charge.

1 After inserting the copy source P2 card into the unit's P2 card slot, press [MENU], select "COPY TO HDD" using [STOP] and [PLAY], and press [STILL].



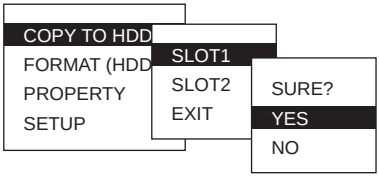
- The data is copied onto the hard drive one card at a time.

2 Using [STOP] and [PLAY], select the card slot, and press [STILL].

Then select "YES" using [STOP], and press [STILL].

Copying now begins.

- To stop copying at any time, press [STILL].
- The data of up to 15 cards can be stored on



To verify (inspect the two sets of data) after copying data onto a hard drive

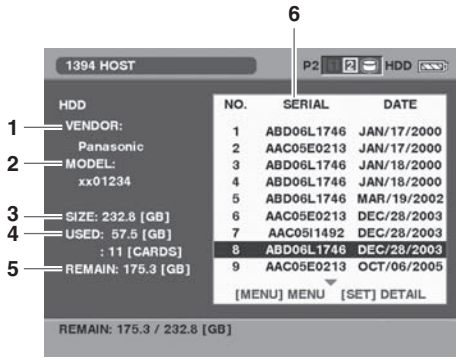
Switch to the 1394 HOST mode, and select "SETUP" – "VERIFY" – "YES" using [STOP], [PLAY] and [STILL], and press [STILL].

- The copying of the P2 card data will also be terminated if the process is aborted during verification of the two sets of data.

Hard drive status displays

You can display the status of the hard drive which is connected to the unit.

1 Using [STOP] and [PLAY], select "PROPERTY", and press [STILL].



1.	VENDER	Name of vender
2.	MODEL	Hard drive model name
3.	SIZE	Total memory size of hard drive
4.	USED	Amount of hard drive memory used (unit: GB) and area of P2 card used (unit: cards)
5.	REMAIN	Remaining hard drive memory (unit: GB)
6.	P2 card information	Information (serial number, copy date) on P2 card whose data has been copied

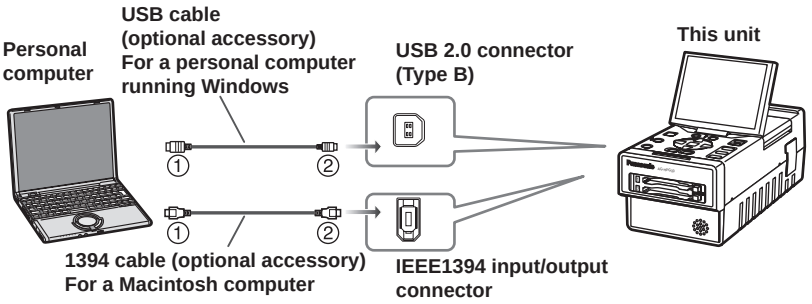
2 Press [MENU] to complete the process.

- You cannot copy data from a hard drive onto a P2 card.
- Supply power from a source other than the 1394 bus. (Power is not supplied from the unit itself.)
- No guarantees for operation are given if the 1394 HOST mode is established first without connecting the hard drive (which supports 1394. a SBP2) and then the hard drive is connected. In a case like this, turn off the power, turn it back on, and release the 1394 HOST mode.
- In the 1394 host mode, the clips in the partition will not be displayed as thumbnails.

Editing by means of external devices

Editing the P2 card data (USB DEVICE mode/1394 DEVICE mode)

You can connect a personal computer to the unit using a USB cable (for a Windows machine) or a 1394 cable (for a Macintosh machine), and operate the image data on the unit's P2 card from the computer.


Personal computer
USB cable (optional accessory) For a personal computer running Windows
USB 2.0 connector (Type B)
This unit
1394 cable (optional accessory) For a Macintosh computer
IEEE1394 input/output connector

Editing in the USB device mode.

Before editing in the USB device mode, refer to "The following conditions must be met when using a USB connection" on page 52.

1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen now appears.

2 Press [MODE] to display the thumbnail display off screen.

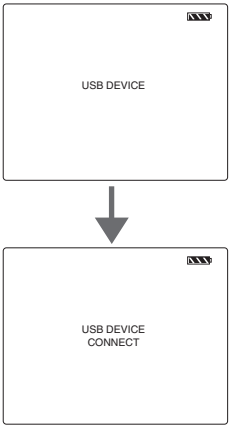
3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OTHER FUNCTIONS" – "PC MODE", and press [STILL].

5 Using [STOP] and [PLAY], select "USB DEVICE", and press [STILL].

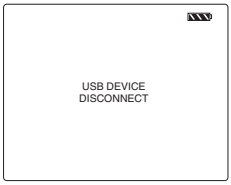
6 Press [MENU] twice to display the thumbnail display off screen.

7 Hold down [MODE] for at least 2 seconds.
After "USB DEVICE" is displayed, "USB DEVICE CONNECT" is displayed once the file access enable status is established.
- The mode cannot be changed or menus displayed while the USB device mode is established.



8 Edit the data on the P2 card using the personal computer.

9 After the data has been edited, disconnect the USB cable.
The display on the LCD monitor changes from "USB DEVICE CONNECT" to "USB DEVICE DISCONNECT."
- When disconnecting the cable, perform the "safe removal of hardware" procedure at the personal computer.



10 Hold down [POWER] for at least 2 seconds to turn off the unit's power.
The PC mode cannot be released simply by holding down [MODE].
- While files are being transferred, the power will not be turned off even if the POWER button is pressed.

- Do not remove the P2 card while the USB connection is established.
- While the USB connection is established, the P2 card access LEDs will remain off at all times except when the data on the cards is being accessed.

Editing in the 1394 device mode.

Before editing in the 1394 device mode, refer to "The following conditions must be met when using a 1394 connection" on page 52.

1 Hold down [POWER] for at least 2 seconds to turn the power on.
The thumbnail screen now appears.

2 Press [MODE] to display the thumbnail display off screen.

3 Press [MENU].

4 Using [STOP], [PLAY] and [STILL], select "OTHER FUNCTIONS" – "PC MODE", and press [STILL].

5 Using [STOP] and [PLAY], select "1394 DEVICE", and press [STILL].

6 Press [MENU] twice to display the thumbnail display off screen.

7 Hold down [MODE] for at least 2 seconds.
After "1394 DEVICE" is displayed, "1394 DEVICE CONNECT" is displayed once the file access enable status is established.
- The mode cannot be changed or menus displayed while the 1394 device mode is established.

8 Edit the data on the P2 card using the personal computer.

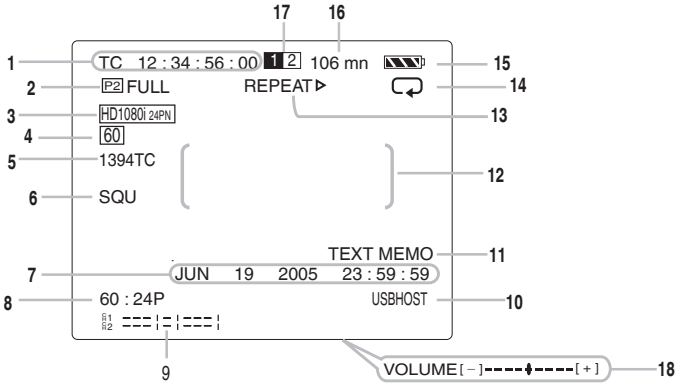
9 After the data has been edited, disconnect the 1394 cable.
The display on the LCD monitor changes from "1394 DEVICE CONNECT" to "1394 DEVICE DISCONNECT."
- After depositing all the drive icons into the recycle bin, check that "1394 DEVICE DISCONNECT" is displayed on the LCD monitor, and then disconnect the 1394 cable.

10 Hold down [POWER] for at least 2 seconds to turn off the unit's power.
The PC mode cannot be released simply by holding down [MODE].
- While files are being transferred, the power will not be turned off even if the POWER button is pressed.

- Do not remove the P2 card while the 1394 connection is established.
- Before replacing one P2 card with another, deposit the drive icon in the recycle bin.

Screen displays

Normal displays



1 Time code displays

Each time [COUNTER] is pressed, the following data (or no information displayed) is selected in turn.

COUNTER: (Only during recording standby or recording)

Counter value

TC:

Time code value: [TC*] is displayed when the time code value could not be read correctly from the P2 card.

UB:

User's bit: [UB*] is displayed when the user's bit value could not be read correctly from the P2 card or tape.

FR:

Information on the frame rate of recordings shot by the camera recorder such as the AG-HVX200

FR 60I : 60i interlace mode (60 fields per second)

FR 60P: 60P progressive mode (60 frames per second)

FR 30P: 30P progressive mode (30 frames per second)

FR 24P: 24P progressive mode (24 frames per second)

FR 24PA : 24P advanced mode (24 frames per second)

FR 50I : 50i interlace mode (50 fields per second)

FR 50P: 50P progressive mode (50 frames per second)

FR 25P: 25P progressive mode (25 frames per second)

FR——: No information

No information displayed

2 Warning information

:

This blinks when a P2 card has not been inserted or if it is write-protected.

P2 FULL :

This blinks when there is no more free memory on the P2 card.

:

This blinks when there is no charge left in the battery.

:

This blinks when the internal battery for the calendar has no charge left. (Page 25)

3 System format displays

HD1080i:

Recording and playback in the 1080i DVCPRO HD format

HD720P:

Recording and playback in the 720P DVCPRO HD format

HD720P30PN:

720P 30PN native playback (in 60 Hz areas only), no recording

HD720P24PN:

720P 24PN native playback (in 60 Hz areas only), no recording

HD720P25PN:

720P 24PN native playback (in 50 Hz areas only), no recording

50M:
Recording and playback in the 480i, 576i DVCPRO50 format

25M:
Recording and playback in the 480i, 576i DVCPRO25 format

DV:
Recording and playback in the 480i, 576i DV format

4 System frequency displays

60:
59.94 Hz

50:
50 Hz

5 1394 TC display

This appears when ON has been selected as the 1394 IN PRESET item setting on the setting menu RECORDING SETUP screen.

6 Squeeze recording display

This appears when images which were squeeze-recorded in the 480i/576i format are played back.

7 Date and time display

The mm/dd/yyyy, hh:mm:ss format (month/day/year/hours/minutes/seconds) is used to display the date and time.

8 Playback frame rate display

24P, 24PA, 60P, 30P, 50P, 25P

- The following frame rates are displayed with native recordings shot by the AG-HVX200, for instance. The “Variable rate: recording rate” display appears during the playback of variable frame recordings.
- The frame rate is not displayed during the playback of 60i or 50i content.

9 Audio level meter display

The meter indicates the levels of the signals which are output to the CH1 and CH2 audio output (AUDIO OUT) connectors (RCA connectors).

10 USB HOST display

This display appears while the USB HOST mode is established.

11 Text memo, shot mark displays

These displays appear for about 3 seconds when [USER], to which a shot mark or a text memo has been assigned ahead of time, is pressed and the shot mark or text memo is recorded.

MARK ON :
When a shot mark has been added

MARK OFF :
When a shot mark has been deleted

TEXT MEMO :
When a text memo has been added

INVALID :
When deletion is not possible

12 Information display

The following information is displayed depending on the circumstances.

- Warning displays, error displays
- Displays for mode switching using [USER] (V OUT OSD, AUDIO OUT, SLOT SEL)
- The function assigned to [USER] is displayed while [MODE] is pressed.

13 Operation status displays

REC : Recording

PAUSE : Recording standby

▯▯ : Playback pause

REPEAT ▷ : Repeat playback

▷▷ (◁◁) :
Rapid forward playback (rapid reverse playback)

▯▯▷ (◁▯▯) :
Frame feed playback (reverse frame feed playback)

x ▷ /x ▷▷ (x ◁ /x ◁◁):
Variable-speed playback (reverse variable-speed playback)

CLIP ▯▯▷ (CLIP ◁▯▯) :
Clip feed (reverse clip feed)

14 Repeat playback setting display

This appears when “ON” has been selected for the “REPEAT” item setting on the setting menu “PLAYBACK FUNCTION” screen.

15 Remaining battery charge display

As the remaining charge drops, the display changes in the following sequence: and .

When the charge is depleted, ( ) blinks.

(While the AC adapter is being used, a display other than may appear: this is normal and is not a sign of trouble.)

16 Remaining media memory displays

The amount of memory remaining on the card in the slot targeted for recording is displayed when “ONE CARD” is selected as the “P2 CARD REMAIN” item setting on the setting menu “DISPLAY SETUP” screen. The target slot can be switched to another slot using “SLOT SEL” assigned to [USER]. When “TOTAL” is selected, the total amount of memory remaining on the two cards is displayed.

17 Media information displays

The card slots in which P2 cards have been inserted and the basic information on the slots are displayed.

1 2 **Lighted:**
Recordable P2 card

1 2 **Lighted in green:**
P2 card targeted for recording

1 2 **Blinking:**
Card recognition underway

– – **:**
No card inserted

P : Write-protected card
F : No more free memory
X : Card cannot be recognized
E : Improperly formatted P2 card (which can be used if it is formatted properly)

18 Monitor volume level meter

When [PAGE/AUDIO MON/VAR] is pressed, the level of the volume which is output from the internal speaker and headphone jack is displayed. You can adjust the volume level using the [+] and [–] buttons.

Warning displays

LOW BATTERY
No operation is possible because the battery charge is depleted.

INCOMPATIBLE CARD
The card complies with the different standard and so it cannot be used.

COPY INHIBITED
The input signals are copy-guarded so they cannot be recorded correctly.

DIR ENTRY NG CARD
The card contains folders which are organized illegally. It cannot be used for special types of recording (interval recording, one-shot recording or loop-rec). A warning will be displayed when this P2 card is inserted into a P2 device or when recording has ended.

RUN DOWN CARD
The P2 card has reached the end of its service life. It is recommended that you replace it. Even when a warning appears, it can still be used for recording or playback. However, a warning will be displayed when this P2 card is inserted into a P2 device or when recording has ended.

FORMAT ERR !
The card does not comply with the P2 standard.

< Thumbnail screen>

CANNOT ACCESS!
Data cannot be accessed because of a problem in the content or for some other reason. Restore the media or clips to the normal operating status, and then use the data.

WRITE PROTECTED!
The P2 or SD card is write-protected. Insert a media on which data can be saved.

NO CARD!
The P2 or SD card has not been inserted. Insert a media which is supported.

CARD FULL!
There is no more free memory on the P2 or SD card. Insert a media with free memory.

CANNOT DELETE !
Data cannot be deleted because of a mismatch in the content versions. Ensure that the same content version as the device is used.

CANNOT FORMAT!
The P2 card cannot be formatted because of a problem. Check the P2 card.

CANNOT REPAIR!
The content cannot be repaired because there is nothing wrong with it or because of a similar reason. Check the selected content.

CANNOT RE-CONNECT!
Clips cannot be reconnected because content which is contained on no more than one card has been selected or because of a similar reason. Check the selected content.

NO COPY TO SAME CARD!
Data cannot be copied because the same card is being used for the copy source and copy destination. Copy the data onto a card which does not contain the selected clip.

TOO MANY CLIPS!
Too many clips have been selected. Reduce the number of clips which have been selected.

LACK OF REC CAPACITY!

There is not enough memory on the card for the clips to be recorded. Insert a card with enough memory on the card for the clips to be recorded.

HDD CAPACITY FULL!

The hard drive does not have enough free memory. Use a new hard drive or formatted hard drive since the connection destination target does not have enough remaining memory.

TOO MANY PARTITIONS!

There are too many partitions. The maximum number of partitions available on a hard drive is 15 so use a new hard drive or formatted hard drive.

HDD DISCONNECTED!

The hard drive has been disconnected. Re-establish the USB connection. If the hard drive still fails to operate properly, turn its power off, and then turn it back on.

CANNOT FORMAT!

The media cannot be initialized (formatted). Change the hard drive which is connected.

TOO MANY TARGETS!

A multiple number of devices have been connected. After disconnecting the unnecessary devices, turn the power of the required device off and then turn it back on.

CANNOT ACCESS TARGET!

An error occurred while accessing the connection destination target. Check the hard drive status and connections.

CANNOT ACCESS CARD!

An error occurred while accessing the P2 card. Check the P2 card.

MISMATCH COMPONENT!

Data cannot be copied because of a mismatch in the memory or format of the copy source P2 card and copy destination P2 card. Use P2 cards with the right amount of memory.

UNKNOWN DEVICE CONNECTED!

A DVD drive or other devices which are not supported have been connected. After disconnecting the unnecessary devices, turn the power of the required device off and then turn it back on.

P2 CARD IS UNFORMATTED!

The P2 card has not been formatted. Use a P2 card which has been formatted.

CARD IS EMPTY! CANNOT COPY!

The P2 card whose data is to be copied is blank. A blank card does not need to have its data copied so no data is copied.

VERIFICATION FAILED!

A mismatch was found by verification after copying. Copy the data again.

TURN POWER OFF!

Turn the power off, and turn it back on for use.

CANNOT RECOGNIZE HDD!

The connection destination target cannot be recognized correctly. Turn the power of the hard drive off and then back on or change the connected hard drive.

PLEASE FORMAT P2 CARD!

This message warns the user that data cannot be copied when data is imported from a hard drive to a P2 card because the P2 card already has data recorded on it. No data can be copied because the copy destination P2 card is not a blank card. After formatting the card using the P2 device, initiate copying again.

Error displays

Errors are displayed when trouble has occurred in the unit, P2 card, etc. If the error persists even after turning the power off and back on, depending on what the error message says, replace the card or contact your dealer.

SYSTEM ERROR

This appears when trouble has occurred in the system. Turn the system's power off and then back on. P2 MICON ERROR (no response from P2 microcomputer), P2 CONTROL ERROR (P2 control trouble)

TURN POWER OFF

This appears when trouble has occurred because a card was ejected while its data was being accessed. Turn the system's power off and then back on.

REC WARNING

This appears when trouble has occurred during recording. Initiate the recording again. If the warning is still displayed, consult your dealer.
CARD ERR (1) (2) (1/2) (Trouble with the P2 card in the slot corresponding to the number shown)

- If the warning persists, turn off the power.
- If the warning persists even when recording is initiated again, replace the existing card with another one.

REC RAM OVERFLOW
(Recording RAM overflow)
ERROR (Other errors)

CANNOT PLAY

This appears when trouble has occurred during playback.

CARD ERR (1) (2) (1/2)
(Trouble with the P2 card in the slot corresponding to the number shown)
CLIP ERROR (Clip trouble)
UPDATING (clip information now being read)
ERROR (Other errors)

1394

This appears when trouble has occurred in the 1394 connection or signals.
1394 INITIAL ERROR (Connection trouble)
1394 INPUT ERROR (OTHER FORMAT)
(Wrong input format)
1394 INPUT ERROR (Input trouble)

Selecting what is to be displayed on the screen

The following items appearing on the LCD monitor screen are displayed when [MENU/MODE CHK] is held down or when a setting for the “OTHER DISPLAY” item (page 76) on the setting menu “DISPLAY SETUP” screen has been selected.

Item displayed	MODE CHECK	OTHER DISPLAY item setting		
		ALL	PARTIAL	OFF
1 Time code displays	—	—	—	—
2 Warning display	—	—	—	x
3 System format displays	✓	✓	✓	x
4 System frequency displays	✓	✓	✓	x
5 1394 TC display	✓	✓	x	x
6 SQU display	✓	✓	✓	x
7 Playback frame rate display	✓*	✓	x	x
8 Audio level meter display	✓	—	—	—
9 Data/time and time display	✓	—	—	—
10 USB HOST display	—	✓	✓	✓
11 TEXT MEMO, SHOTMARK display	—	—	—	—
12 Repeat playback setting display	✓	✓	✓	x
13 Remaining battery charge display	✓	—	—	—
14 Remaining media memory displays	✓	—	—	—
15 Media information displays	✓	—	—	—
16 Operation status displays	—	✓	✓	✓
17 Information display	—	—	—	—
18 Monitor volume level meter	—	—	—	—

✓ : Displayed
x : Not displayed
— : Displayed by another setting

“✓” in the MODE CHECK column indicates the items which are displayed when [MENU/MODE CHK] is held down.
* The FRAME RATE is not displayed when the 60i format is used.

List of recording/playback and output formats

For system format 60 Hz regions

Format setting	Recording status		Output setting	Output status				
SYS FORAMT	1394 recording/ playback format	Recording/ playback audio channels	CMPNT/ SDI SEL	SDI OUT	SDI OUT AUDIO	COMPONENT OUT	VIDEO OUT	Playback 1394 output
1080i/ 60i	DVCPRO HD1080i/59.94i	4ch	AUTO	1080i/ 59.94i	4ch	1080i/ 59.94i	480i/ 59.94i	DVCPRO HD1080i/59.94i
			1080i	1080i/ 59.94i		1080i/ 59.94i		
			480i	480i/ 59.94i		480i/ 59.94i		
720P/ 60P	DVCPRO HD720P/ 59.94P	4ch	AUTO	720P/ 59.94P	4ch	720P/ 59.94P	480i/ 59.94i	DVCPRO HD720P/59.94P
			1080i	1080i/ 59.94i		1080i/ 59.94i		
			480i	480i/ 59.94i		480i/ 59.94i		
720P/ 30PN	60P recording disabled/ playback only*1	4ch*4	AUTO	720P/ 59.94P	4ch*4	720P/ 59.94P	480i/ 59.94i	DVCPRO HD720P/59.94P
			1080i	1080i/ 59.94i		1080i/ 59.94i		
			480i	480i/ 59.94i		480i/ 59.94i		
720P/ 24PN	60P recording disabled/ playback only*2	4ch*4	AUTO	720P/ 59.94P	4ch*4	720P/ 59.94P	480i/ 59.94i	DVCPRO HD720P/59.94P
			1080i	1080i/ 59.94i		1080i/ 59.94i		
			480i	480i/ 59.94i		480i/ 59.94i		
480i/ 60i	DVCPRO50/ DVCPRO/ DV480i/59.94i*5	4ch or 2 channels*7	Invalid	480i/ 59.94i	4ch or 2 channels*6	480i/ 59.94i	480i/ 59.94i	DVCPRO50/ DVCPRO/ DV480i/59.94i *4

*1 The signals are converted to OVER 60P by 2:2 pull-down for playback.
*2 The signals are converted to OVER 60P by 2:3 pull-down for playback.
*3 The signals are converted to OVER 50P by 2:3 pull-down for playback.
*4 Clips recorded with the sound muted are played back with the sound muted.
*5 The DVCPRO50, DVCPRO or DV format is selected according to the [SD MODE] setting.
*6 The sound is delivered through 4 channels with the DVCPRO50 format and through 2 channels or 4 channels with the DVCPRO or DV format.
*7 When 32 kHz 4-channel sound of the DV format is input, it is converted to 48 kHz 4-channel sound and recorded.

[For 50 Hz system format regions]

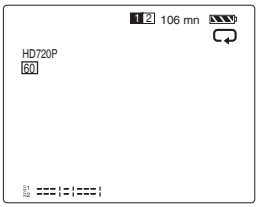
Format setting	Recording status		Output setting	Output status				
SYS FORAMT	1394 recording/ playback format	Recording/ playback audio channels	CMPNT/ SDI SEL	SDI OUT	SDI OUT AUDIO	COMPONENT OUT	VIDEO OUT	Playback 1394 output
1080i/ 50i	DVCPRO HD1080i/50i	4ch	AUTO	1080i/ 50i	4ch	1080i/ 59.94i	576i/50i	DVCPRO HD 1080i/50i
			1080i	1080i/ 50		1080i/ 59.94i		
			576i	576i/ 50i		480i/ 59.94i		
720P/ 50P	DVCPRO HD720P/50P	4ch	AUTO	720P/ 50P	4ch	720P/ 59.94P	576i/50i	DVCPRO HD 720P/50P
			1080i	1080i/ 50i		1080i/ 59.94i		
			576i	576i/ 50i		480i/ 59.94i		
720P/ 25PN	50P recording disabled/ playback only*3	4ch*4	AUTO	720P/ 50P*6	4ch*4	720P/ 59.94P	576i/50i	DVCPRO HD 720P/50P
			1080i	1080i/ 50i		1080i/ 59.94i		
			576i	576i/ 50i		480i/ 59.94i		
576i/ 50i	DVCPRO50/ DVCPRO/ DV576i/50i *5	4ch or 2 channels*7	Invalid	576i/ 50i	4ch or 2 channels*6	720P/ 59.94P	576i/50i	DVCPRO50/ DVCPRO/DV 576i/50i*4
						1080i/ 59.94i		
						480i/ 59.94i		

*1 The signals are converted to OVER 60P by 2:2 pull-down for playback.
*2 The signals are converted to OVER 60P by 2:3 pull-down for playback.
*3 The signals are converted to OVER 50P by 2:3 pull-down for playback.
*4 Clips recorded with the sound muted are played back with the sound muted.
*5 The DVCPRO50, DVCPRO or DV format is selected according to the [SD MODE] setting.
*6 The sound is delivered through 4 channels with the DVCPRO50 format and through 2 channels or 4 channels with the DVCPRO or DV format.
*7 When 32 kHz 4-channel sound of the DV format is input, it is converted to 48 kHz 4-channel sound and recorded.

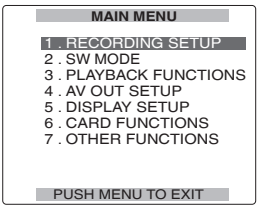
Basic operations on the setting menus

1 Hold down [POWER] for at least 2 seconds to turn the power on.

2 Press [MODE] to switch to the thumbnail display off screen.

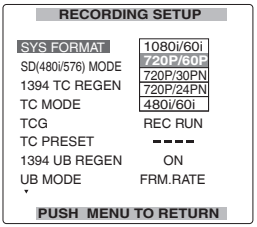


3 Press [MENU] to display the menu.
Example:

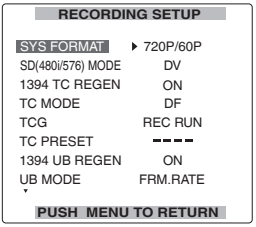


4 Using [STOP] and [PLAY], move the highlighting to the function to be set.

5 Press [STILL] to display the setting item.
Example:



6 Using [STOP] and [PLAY] , move to the item to be set.



7 Press [STILL] to set the item.
To change a numerical value, etc., use [FF] and [REW] to change the setting.

8 To change other items, repeat steps 6 and 7.
To exit the settings, press [MENU] and return to the thumbnail display off screen.

9 To change another function, repeat steps 4 to 7.
To exit the settings, press [MENU] and return to the thumbnail display off screen.

Initializing the setting menu

You can return (initialize) the setting menu user files to the factory status.

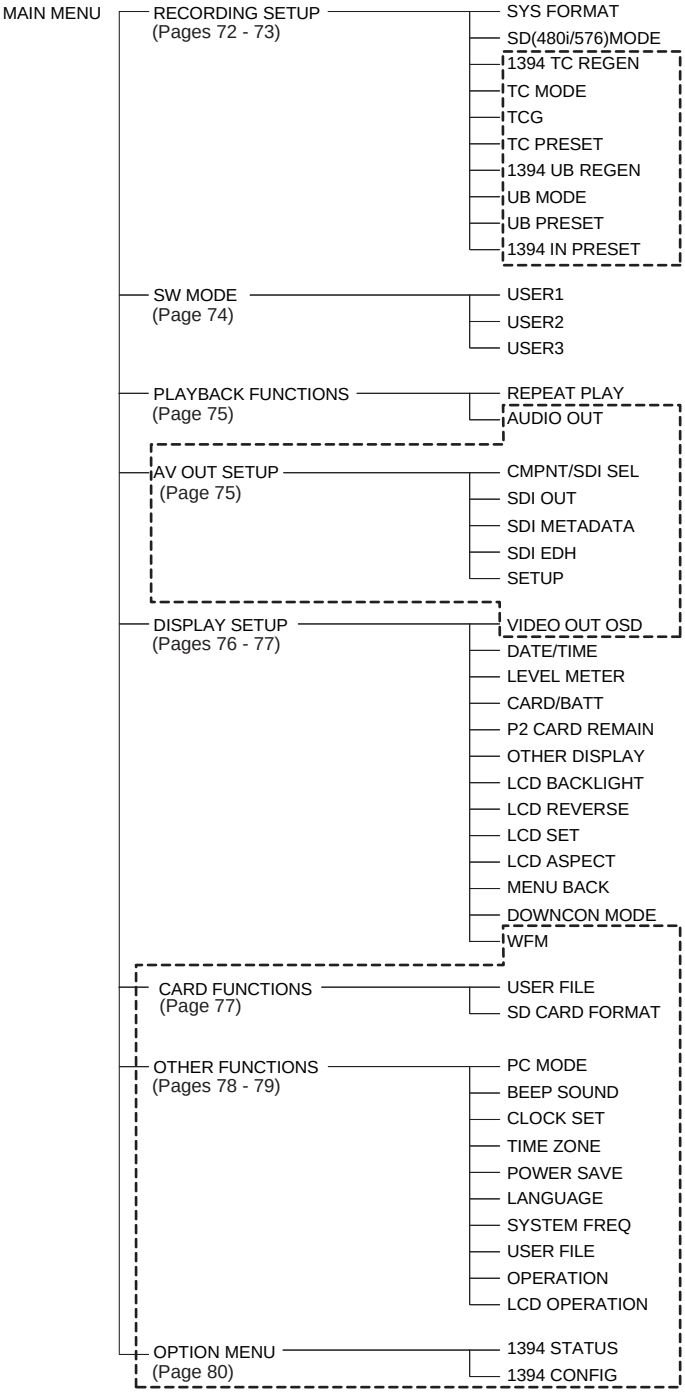
1 Switch the display to the thumbnail display off screen.

2 Press [MENU].

3 Using [STOP], [PLAY] and [STILL], select "OTHER FUNCTIONS" – "USER FILE" – "INITIAL".

4 Press [STILL].
The menu settings of the user files currently being used are returned to the factory status.

Setting menu configuration



Menus enclosed in the broken-line frames are not displayed in the USB HOST mode.

List of setting menus

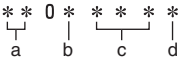
RECORDING SETUP screen

When the settings are changed using the “SYSTEM FREQ” item (page 79) on the “OTHER FUNCTIONS” screen, whatever has been set on the “RECORDING SETUP” screen will be changed to the initial setting.

Item	Description of settings
SYS FORMAT	This is used to set the 1394 input recording format and playback format. (60 Hz) **1080/60i, 720/60P, 720/30PN, 720/24PN, 480/60i** (50 Hz) **1080/50i, 720/50P, 720/25PN, 576/50i**
SD(480i/576) MODE	This is used to set the 1394 input recording video compression format and playback format. **DVCPRO50, DVCPRO, DV**
1394 TC REGEN	This is used to select the time code to be recorded when recording signals from a device which is connected to the 1394 connector. **ON:** The data is recorded using the time code of the signals supplied to the 1394 connector. **OFF:** The data is recorded using the time code set using the TC MODE item or TCG item.
TC MODE (60 Hz regions only)	This is used to select the time code compensation mode when recording the time codes of the internal time code generator. **DF:** The drop frame mode is used. **NDF:** The non-drop frame mode is used.
TCG	This is used to set the operation mode for running the time code of the internal time code generator. **FREE RUN:** The time code runs no matter what operating mode is established. **REC RUN:** The time code runs only during recording.
TC PRESET	This is used to set the initial value of the time code to be recorded.
1394 UB REGEN	This is used to set the recording of the user’s bit when recording input signals from a device which is connected to the 1394 connector. **ON:** The signals are recorded using the user’s bit of the signals supplied to the 1394 connector. **OFF:** The signals are recorded using the user’s bit selected by the UM MODE item. When this item has been set to ON, it takes priority over the UB MODE item.

___ The underlined settings are the factory mode settings.

RECORDING SETUP screen (continued)

Item	Description of settings
UB MODE	This is used to set what is to be recorded as the user's bit. **USER:** The user information is recorded. **TIME:** The time of the recording is recorded. **DATE:** The date/time of the recording are recorded. **TCG:** The value generated by the time code generator is recorded. **FRM. RATE:** The information of the frame rate after frame conversion is recorded.  a: Information on the verification of the user's bit value **b: Frame sequence number** •"F" is displayed in the 60i/30P mode. **c: Frame rate information** • Frame rate (60, 30 or 24) • I/P identification information • Conversion information • Frame rate factor **d: Recording control information** • Update frame information • REC START/STOP information Note **When playing back native recorded clips** To set the 1394 output user's bit as the frame rate information, select FRM. RATE for this setting, and play back the clips. If this is the case, the user's bit displayed on the screen will also be changed to the frame rate information.
UB PRESET	This is used to set the user's bit. However, USER must be selected as the UB MODE item setting.
1394 IN PRESET	When [RESET/TC SET] is pressed, the value generated by the internal time code generator is synchronized with the 1394 input time code. **ON:** The 1394 input synchronization setting mode is established. **OFF:** The 1394 input synchronization setting mode is released.

___ The underlined settings are the factory mode settings.

SW MODE screen

Item	Description of settings
USER1	This is used to set which function is to be assigned to the USER1 button. **SYS FORMAT:** System format (page 72) **SD MODE :** SD mode (page 72) **SHOT MARK :** A shot mark is recorded on the clip. (Page 39) **TEXT MEMO :** A text memo is recorded. (Page 38) **LCD BL :** LCD backlight (page 76) **V OUT OSD :** Video output on-screen display (page 76) **AUDIO OUT :** Audio output (page 75) **SLOT SEL :** P2 card slot selection (page 49) **LCD RVS :** LCD reverse (page 76) **WFM :** Waveform monitor (page 49)
USER2	This is used to set which function is to be assigned to the USER2 button. The settings of this item are the same as the USER1 item settings. **SHOT MARK**
USER3	This is used to set which function is to be assigned to the USER3 button. The settings of this item are the same as the USER1 item settings. **TEXT MEMO**

___ The underlined settings are the factory mode settings.

PLAYBACK FUNCTIONS screen

Item	Description of settings
REPEAT PLAY	This is used to set repeat playback.(Page 43) **ON:** Playback is repeated. **OFF:** Playback is not repeated.
AUDIO OUT	This is used to set the audio signals to be output from the AUDIO OUT connectors (pin jacks) during playback. **CH1 · CH2:** CH1 connector = CH1 signal, CH2 connector = CH2 signal, **CH1:** CH1 connector = CH1 signal, CH2 connector = CH1 signal, **CH2:** CH1 connector = CH2 signal, CH2 connector = CH2 signal, **CH3 · CH4:** CH1 connector = CH3 signal, CH2 connector = CH4 signal, **CH3:** CH1 connector = CH3 signal, CH2 connector = CH3 signal, **CH4:** CH1 connector = CH4 signal, CH2 connector = CH4 signal,

AV OUT SETUP screen

Item	Description of settings
CMPNT/SDI SEL	This is used to set the format when D connector signals and HD/SD-SDI signals are output. (60 Hz regions) **AUTO:** Operation reflects the setting selected for the SYS FORMAT item on the RECORDING SETUP screen. **1080i, 480i** (50 Hz regions) **AUTO:** Operation reflects the setting selected for the SYS FORMAT item on the RECORDING SETUP screen. **1080i, 576i**
SDI OUT	This is used to set the SDI output. **ON:** SDI signals are output. **OFF:** SDI signals are not output.
SDI METADATA	This is used to set whether to superimpose the meta-data when HD-SDI signals are output. **ON:** The meta-data is superimposed. **OFF:** The meta-data is not superimposed.
SDI EDH	This is used to set whether to superimpose error detection handling (EDH) when SD-SDI signals are output. **ON:** EDH is superimposed. **OFF:** EDH is not superimposed.
SETUP **(60 Hz regions only)**	The setup level of the video signals during playback is set. **0%:** 0% is set as the output setup level. **7.5%A:** 7.5%A is set as the output setup level.

___ The underlined settings are the factory mode settings.

DISPLAY SETUP screen

Item	Description of settings
VIDEO OUT OSD	When ON is selected as this item's setting, the information displayed on the LCD monitor is output as a video output signal together with the video signals. (Component output signals, VIDEO output signals, SDI output signals) **ON, OFF**
DATA/TIME	This is used to select the setting for displaying the date and time on the LCD monitor and video output signals. **OFF:** The date and time are not displayed. **TIME:** The time is displayed. **DATE:** The date is displayed. **TIME&DATE:** The date and time are displayed.
LEVEL METER	This is used to set the audio level meter display to ON or OFF. **ON, OFF**
CARD/BATT	This is used to set the amount of memory remaining on the card and charge level remaining in the battery to ON or OFF. **ON, OFF**
P2 CARD REMAIN	This is used to set how the amount of memory remaining on the P2 card is to be calculated. **ONE-CARD:** The amount of memory remaining on the P2 card in the selected slot is calculated. **TOTAL:** The amount of memory remaining on the P2 cards in both slots is calculated.
OTHER DISPLAY	This is used to set the amount of information to be displayed on the LCD monitor. (Page 73) **OFF, PARTIAL, ALL**
LCD BACKLIGHT	This is used to adjust the backlight of the LCD monitor. The backlight becomes brighter than usual when HIGH is selected. **HIGH, NORMAL**
LCD SET	This is used to adjust the display level of the images on the LCD monitor. (Page 22) **LCD COLOR LEVEL** **LCD BRIGHTNESS** **LCD CONTRAST**
LCD REVERSE	This is used to set the function for reversing the top/bottom and left/right of the images displayed on the LCD monitor. **NORM:** The images are displayed normally. **REVERSE:** The images are displayed with their top/bottom and left/right reversed. • The direction in which the menu highlighting moves and the direction of the cursor movement on the thumbnail display screen cannot be reversed in either the up/down or left/right direction.
DOWNCON MODE	This is used to set the down-converter output signal mode. **SIDE CROP, LETTER-BOX, SQUEEZE**

___ The underlined settings are the factory mode settings.

DISPLAY SETUP screen (continued)

Item	Description of settings
LCD ASPECT	This is used to select the aspect ratio for the LCD monitor. **AUTO:** The aspect ratio is automatically selected based on the recording mode, playback mode and other information. **4:3:** The aspect ratio is fixed at 4:3. Note When images are displayed with the 16:9 aspect ratio, black bands appear at the top and bottom of the screen. No parts of the images are missing.
MENU BACK	**This is used to reduce the transmittance of the background behind the menu display screen so that the menu characters can be seen more easily.** **ON:** The background transmittance is reduced. • This transmittance is not reduced while the LCD SET item on the DISPLAY SETUP screen is being set. **OFF:** The background transmittance is 100%.
WFM	This is used to select what is to be displayed on the waveform monitor. **OFF:** No display **WAVE:** Waveforms are displayed. **VECTOR:** Vectors are displayed.

CARD FUNCTIONS screen

Item	Description of settings
USER FILE	Up to four sets of menu item settings can be saved on the SD memory card. Titles can be given to the files which have been saved.
SD CARD FORMAT	This is used to format SD memory cards.

___ The underlined settings are the factory mode settings.

OTHER FUNCTIONS screen

<table>
<tr><th>Item</th><th>Description of settings</th></tr>
<tr><td>PC MODE</td><td>This is used to select the connectors and mode to be used for data transfer. (The USB and 1394 connectors cannot be used at the same time.)
USB DEVICE:
File transfer mode using the USB connector
<u>USB HOST</u>:
In this mode, files are copied on an external hard disk from the P2 card using the USB connector.
1394 DEVICE:
File transfer mode using the 1394 connector
1394 HOST:
In this mode, files are copied on an external hard disk from the P2 card using the 1394 connector.</td></tr>
<tr><td>BEEP SOUND</td><td>This is used to set the beep sound to ON or OFF.
ON, <u>OFF</u></td></tr>
<tr><td>CLOCK SET</td><td>This is used to set the unit’s internal calendar.</td></tr>
<tr><td>TIME ZONE</td><td>The time is set in 30-minute increments from 12:00 hours behind GMT to 13:00 hours ahead of GMT (a setting of 12:45 hours ahead is also available). (Refer to the table below.)
<u>+9:00</u>
<table>
<tr><th>Time difference (from GMT)</th><th>Region (city)</th><th>Time difference (from GMT)</th><th>Region (city)</th></tr>
<tr><td>00:00</td><td>Greenwich</td><td>– 00:30</td><td></td></tr>
<tr><td>– 01:00</td><td>Azores</td><td>– 01:30</td><td></td></tr>
<tr><td>– 02:00</td><td>Central Atlantic</td><td>– 02:30</td><td></td></tr>
<tr><td>– 03:00</td><td>Buenos Aires</td><td>– 03:30</td><td>Newfoundland</td></tr>
<tr><td>– 04:00</td><td>Halifax (Nova Scotia)</td><td>– 04:30</td><td></td></tr>
<tr><td>– 05:00</td><td>New York</td><td>– 05:30</td><td></td></tr>
<tr><td>– 06:00</td><td>Chicago</td><td>– 06:30</td><td></td></tr>
<tr><td>– 07:00</td><td>Denver</td><td>– 07:30</td><td></td></tr>
<tr><td>– 08:00</td><td>Los Angeles</td><td>– 08:30</td><td></td></tr>
<tr><td>– 09:00</td><td>Alaska</td><td>– 09:30</td><td>Marquesas Islands</td></tr>
<tr><td>– 10:00</td><td>Hawaii</td><td>– 10:30</td><td></td></tr>
<tr><td>– 11:00</td><td>Midway Islands</td><td>– 11:30</td><td></td></tr>
<tr><td>– 12:00</td><td>Kwajalein Atoll</td><td>+ 11:30</td><td>Norfolk Islands</td></tr>
<tr><td>+ 13:00</td><td></td><td>+ 10:30</td><td>Lord Howe Island</td></tr>
<tr><td>+ 12:00</td><td>New Zealand</td><td>+ 09:30</td><td>Darwin Islands</td></tr>
<tr><td>+ 11:00</td><td>Solomon Islands</td><td>+ 08:30</td><td></td></tr>
<tr><td>+ 10:00</td><td>Guam</td><td>+ 07:30</td><td></td></tr>
<tr><td>+ 09:00</td><td>Tokyo</td><td>+ 06:30</td><td>Rangoon</td></tr>
<tr><td>+ 08:00</td><td>Beijing</td><td>+ 05:30</td><td>Mumbai (Bombay)</td></tr>
<tr><td>+ 07:00</td><td>Bangkok</td><td>+ 04:30</td><td>Kabul</td></tr>
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<tr><td>+ 04:00</td><td>Abu Dhabi</td><td>+ 01:30</td><td></td></tr>
<tr><td>+ 03:00</td><td>Moscow</td><td>+ 00:30</td><td></td></tr>
<tr><td>+ 02:00</td><td>Eastern Europe</td><td>+ 12:45</td><td>Chatham Islands</td></tr>
<tr><td>+ 01:00</td><td>Central Europe</td><td></td><td></td></tr>
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___ The underlined settings are the factory mode settings.

OTHER FUNCTIONS screen (continued)

Item	Description of settings
POWER SAVE	This is used to select the power-saving mode which is to be established when none of the function keys or buttons have been operated for 5 or so minutes. **ON:** The unit's power is turned off. **OFF:** The unit remains in the stop mode without turning off its power. • While the unit is connected by an IEEE1394 cable or USB cable to an external device and communicating with it, the power will not be turned off even if the function keys or buttons have not been operated for the prescribed period of time. • Even when ON is selected as this item's setting, the power will not be turned off during playback (PLAY, CUE (rapid forward), REV (rapid reverse), FF, REW or STILL) or during recording.
LANGUAGE	This is used to set the language in which the menu is to be displayed. **ENGLISH:** English **JAPANESE:** Japanese **CHINESE:** Chinese
SYSTEM FREQ	This is used to set the system frequency in line with NTSC or PAL. **59.9 Hz, 50 Hz**
USER FILE	**LOAD:** The settings of the user files last saved are loaded. **SAVE:** The settings of the user files which have been changed are stored. **INITIAL:** The user file settings are returned to the factory settings. In order for the settings to take effect after loading or initializing, turn off the unit's power and turn it back on. • Even when initializing has been performed, the TIME ZONE item (page 80) will remain unchanged.
OPERATION	This is used to display the power-on time (using 5 digits).
LCD OPERATION	This is used to display the power-on time (using 5 digits) for the backlight of the LCD monitor.

___ The underlined settings are the factory mode settings.

OPTION MENU screen

This screen appears when [MENU] are pressed while [STOP] is held down on the thumbnail display off screen.

Item	Description of settings
1394 STATUS	The 1394 status display sub-screen is displayed. **FORMAT:** Format of the input or output signals **RATE:** Transfer rate of the input or output signals **60/50:** System of input or output signals **CH:** Value of the channels whose signals are input or output **SPEED:** Transfer speed of the input or output signals **STATUS:** Status of the signals which are input or output by the IEEE1394 digital interface **VIDEO:** Status of the input or output video signals **AUDIO:** Status of the input or output audio signals
1394 CONFIG	The 1394 expansion menu is displayed. **DFLT:** For normal operation, keep this setting. **1-255**

___ The underlined settings are the factory mode settings.

Troubleshooting (Q&A)

Power-related Q&A

No power.	• Has the battery or AC adapter been connected properly? Check the connections.	P 15
The power suddenly goes off without warning.	• In order to preserve the battery charge and prevent tape wear, the power will be automatically turned off when more than 5 minutes have elapsed in the shooting pause status. Check the setting for the POWER SAVE item on the setting menu OTHER FUNCTIONS screen.	P 79
The power is turned on but it goes off immediately.	• Has the battery charge been depleted? If the remaining battery charge display is blinking or [ ] is displayed, it means that there is little or no charge left in the battery. Charge the battery or replace the existing battery with a fully charged battery.	P 63

Battery-related Q&A

The battery charge is depleted quickly.	• Was the battery charged sufficiently? Charge the battery until the CHARGE lamp on the AC adapter goes off.	P 14
	• Is the battery being used in a location where the temperature is low? Batteries are affected by the ambient temperature. Batteries operate for shorter periods of time at low-temperature locations.	—
	• Has the battery reached the end of its service life?The battery may have reached the end of its service life. Although the service life will differ depending on how the battery has been used, if the battery can be used only for short periods of time even after it has been fully charged, it means that it has reached the end of its service life.	—
The battery cannot be charged.	• Is the DC cable connected to the AC adapter? The battery cannot be charged if the DC cable is connected.	P 15

Recording

Recording does not start.	• Is the unit's power on? • Has the battery reached the end of its service life? The battery may have reached the end of its service life. Although the service life will differ depending on how the battery has been used, if the battery can be used only for short periods of time even after it has been fully charged, it means that it has reached the end of its service life.	P 16 —
The P2 card has been inserted properly, but recording is not possible.	• Is the P2 card's write-protect switch at the PROTECT position?Images cannot be recorded while this switch is at the PROTECT position. • Does the P2 card have very little remaining memory?Either save the data concerned on another media and delete the unnecessary data on the P2 card concerned or replace the P2 card with a new card. • Has the P2 card been formatted properly?Does the card have a format which cannot be used?Format the card using the unit. • P2 cards with a memory size of 2GB cannot be used.	P 23 P 40 P 22 P 25

Editing

Data cannot be read on the SD memory card.	• Has the SD memory card been formatted properly? Format the card using the unit.	P 26
Non-linear editing is not possible.	• Check the specifications of the cable used to connect the unit with the computer.	P 60

Playback

Mosaic-like noise appears during rapid forward or rapid reverse playback.	• This phenomenon is characteristic of digital equipment. It is not a sign of trouble.	—
No playback pictures appear even though the TV set is connected properly.	• Is the input selector on the TV set at the “video input” position? Carefully read the instructions accompanying the TV set, and select the connected video input connector.	—
No playback sound is heard from the unit’s speaker.	• Has the unit’s volume level been turned down too low? Press the AUDIO MON/VAR “+” button, and adjust the volume level.	P 64
No hot swap playback.	• This unit does not support hot swap playback. To continue playback, stop playback, and then replace the P2 card with another card.	P 48

Operating precautions

When using the unit in rainy or snowy weather, at the beach or other locations, take care to protect it from precipitation and sea water.

- Otherwise, trouble may occur in the unit and its cards. (It may not be possible to restore the original functions.)

Keep the unit away from appliances (such as TV sets and TV game machines) which generate magnetic fields.

- When the unit is used on top of or near a TV set, the images and sound may be distorted by the electromagnetic waves emanating from the TV set.
- Strong magnetic fields generated by speakers or large motors may damage the recordings or distort the images.
- The electromagnetic waves emanating from microcomputers may adversely affect the unit and distort the images and sound.
- If the unit is adversely affected by an appliance that generates magnetic fields and fails to operate properly as a result, turn off its power, and either remove its battery or unplug the AC adapter from the power outlet. Then install the battery again or re-connect the AC adapter. After doing this, turn the unit's power back on.

Do not use the unit near a radio transmitter or high-voltage appliance.

- Doing so may adversely affect the recorded images and sound.

When using the unit at the beach or similar locations, take care to protect it from sand and dust.

- Sand and dust may damage the unit and its cards. (Take particular care when inserting or ejecting the cards.)

AC adapter and battery

- When the battery temperature is extremely high or extremely low or when the battery has not been used for a prolonged period and been left discharged, the [CHARGE] lamp will blink several times, and charging will start automatically.
- If the [CHARGE] lamp continues blinking even when the battery temperature is normal, this may be a sign of trouble in the battery or AC adapter. Consult with your dealer.
- When the battery is warm, it will take longer than usual to recharge it.
- When the AC adapter is used near a radio, the sound from the radio may be distorted. Use the AC adapter and radio at a distance of at least 1 meter from each other.
- Noise is output while the AC adapter is being used, but this is not a sign of trouble.

When carrying the unit around, take care not to drop it.

- Strong impacts may damage the unit's body, preventing it from operating properly.

Do not expose the unit to insecticides or volatile sprays or liquids.

- These substances may deform the unit's body or cause its paint to peel off.
- Do not bring the unit into contact with products made of rubber or vinyl for prolonged periods of time.

Characteristics of the battery

A rechargeable lithium-ion battery is used in this unit. Electrical energy is generated by the chemical reactions taking place inside it. These reactions are susceptible to the effects of the ambient temperature and humidity, and the higher or the lower the temperature, the quicker the battery charge will be used up. When the battery is used where the temperature is extremely low, it will power the unit for only 5 minutes or so.

When the battery reaches an extremely high temperature, its protection function is activated, making it impossible for the battery to be used for a while.

After using the unit, always remember to remove the battery.

Be sure to remove the battery from the unit. (If it is left in place, a very faint current will continue to flow even when the unit's power has been turned off.) If the battery is left in place for a prolonged period, it may discharge excessively so that it cannot be used again even when it is charged at a later time.

Protect the battery terminals.

Keep the battery terminals free from dust and foreign matter.

If the battery has been inadvertently dropped, check whether its body and terminal area have been deformed.

Installing a deformed battery in the unit or in the AC adapter may damage the unit or AC adapter.

Precautions when memory cards are to be destroyed or given to other parties

The formatting and deletion functions provided by the unit and personal computers serve merely to change the file management information: they will not completely erase all the data on the memory card. When a memory card is to be destroyed or given to another party, it is recommended that you destroy the actual card physically or use a data deletion software program for use with personal computers available on the market to completely erase all the data on the card. You, the user, are responsible for managing the data on your memory cards.

Liquid crystal display

- When the same image or characters are left displayed on the LCD monitor for a prolonged period, they may become burned into the screen. However, the original condition of the screen will be restored after the power has been kept off for several hours.
- The liquid crystal part of the monitor has been fabricated using high-precision technology. The number of its effective pixels is more than 99.99%, but this still leaves less than 0.01% of its pixels which may be missing or permanently lighted. This is not a sign of trouble and will have absolutely no effect on the images which have been recorded.
- Condensation may form on the liquid crystal part of the monitor if the unit is placed in a location where there is a significant difference in the temperature levels. If this happens, wipe off the condensation with a soft dry cloth.
- If the unit becomes very cold, the LCD monitor screen will be darker than usual immediately after the power has been turned on. When the temperature inside the unit rises, the normal brightness will be restored.

Protective caps for the connectors

Cover the connectors which are not going to being used with the protective caps.

Updating the drivers installed in the unit

For the latest information concerning drivers, access the P2 support page on the web site given below.

http://panasonic.biz/sav/

When updating a driver, check the unit's version by selecting thumbnail menu "OPERATION" – "SERVICE" – "SYSTEM INFO", then access the above web site, and download the driver if necessary.
Complete the updating by loading the downloaded file into the unit through an SD memory card. For details on the updating procedure, refer to the information on the above site.

- When installing the update, be absolutely sure to connect the AC adapter.
- It is recommended that SD memory cards which comply with the SD standard be used by the unit. Be absolutely sure to use the unit to format the SD memory cards. If they need to be formatted using a personal computer, download the special software from the above site, and use it to format them.

Maintenance

Do not use benzine or paint thinners to clean the unit.

- Doing so may deform the unit or cause its paint to peel off.
- Before cleaning the unit, remove the battery or unplug the AC cord from the power outlet.
- Wipe the unit with a clean soft cloth. To remove stubborn dirt, dip a cloth into some kitchen detergent which has been diluted with water, wring it out and wipe off the dirt, and then use a dry cloth to take up any remaining moisture.

Condensation

When condensation forms on or inside the unit, the principle behind its formation is the same as when droplets of water form on the window panes of a heated room. It forms when the unit and its cards are brought into a space with significantly different temperature and humidity levels, specifically when:

- They have been brought to a very humid location full of steam or to a room immediately after the heating has been turned on.
- They have suddenly been brought from an air-conditioned place to a location with high temperature and humidity levels.
- If the unit and its cards are brought to such locations, do not turn on the unit's power but leave the unit and cards standing for about 10 minutes.

Storage precautions

Before storing the unit, remove its battery.
Select a location with minimal moisture and a relatively constant temperature to store the unit.
[Recommended temperature: 15 to 25°C]
[Recommended relative humidity: 40 to 60%]

Unit

- Wrap the unit in a soft cloth to protect it from dust and dirt.

Battery

- The service life of the battery will be shortened if the battery is kept where the temperature is extremely high or extremely low.
- Storing the unit in a location with high concentrations of oily smoke or dust may cause the connectors to become corroded and other trouble to occur.
- **Ensure that the battery terminals are not brought into contact with any metal objects (such as necklaces or hairpins). Otherwise, the terminals may be shorted and generate heat which could cause burns if touched.**
- Ensure that the battery has no charge before storing it. When the battery is to be stored for a prolonged period, it is recommended that you charge it once a year, use the battery in the unit until its charge is used up, and then return it to storage.

P2 card

- After removing the P2 cards from the unit, always remember to cover their terminals with the dedicated caps to keep sand and dust away from the connector areas. Keep the P2 cards in their protective cases when storing them or carrying them around.
- Do not store P2 cards wherever there are corrosive gases in the atmosphere.

SD memory cards

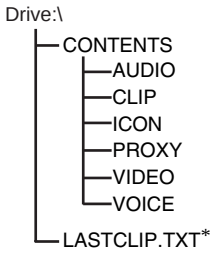
- After removing the SD memory cards from the unit, always remember to put them in their protective cases.
- Do not store P2 cards wherever there are corrosive gases in the atmosphere.
- Do not leave SD memory cards inside vehicles or in places exposed to direct sunlight or where the temperature will be high.
- Do not leave SD memory cards in places where the humidity level is high or where there is a great deal of dust.

Handling the data recorded on P2 cards

"P2 cards" are semiconductor memory cards which have been adopted as the recording media for the "DVCPRO P2 series" of professional-use video production and broadcast equipment.

■ The data recorded in the DVCPRO P2 format is in a file format which is highly compatible with personal computers. The data file structure has its own format, the files contain not only the video and audio data which are converted into MXF files but various other important information, and the data is associated in the folder configuration shown on the right.

Changing or deleting some of this information may result in trouble: for instance, it may make it impossible for the data to be recognized as P2 data or for the cards to be used in P2 devices.



All of these folders are needed.
*Saved in this file is the information of the last clip recorded by the P2 device.

■ In order to prevent any of the information from being lost when transferring the data on a P2 card to a personal computer or writing the data stored in a personal computer onto a P2 card, be absolutely sure to download the "P2 viewer" dedicated software from the following web site and use it for this purpose. (Operating systems supported: Windows XP, Windows 2000)

(Japanese) https://eww.pavc.panasonic.co.jp/pro-av/support/cs/csregistp2m/p2indexj.html
(English) https://eww.pavc.panasonic.co.jp/pro-av/support/cs/csregistp2m/p2indexe.html

■ When transferring data to a personal computer using a regular IT tool such as Microsoft Windows Explorer or Apple Finder, proceed as follows.
To return the data to the P2 card, be absolutely sure to use the P2 viewer.

- Transfer the data together with the CONTENTS folder and LASTCLIP.TXT file.
  Do not perform any operations for the files under the CONTENTS folder.
  When copying data, copy the LASTCLIP.TXT file together with the CONTENTS folder.
- When transferring the data on a multiple number of P2 cards to a personal computer, create the folder for each P2 card in order to prevent the same clip names from being overwritten.
- Do not delete the data on P2 cards.
- P2 cards must always be formatted using a P2 device prior to use.

- "Microsoft" and "Windows" are the registered trademarks of Microsoft Corporation of the United States in the United States and other countries.
- "Apple" and "Macintosh" are the registered trademarks of Apple Computer, Inc. of the United States in the United States and other countries.

Concerning the use of memory cards

In this unit, use SD memory cards which comply with the SD standard or SDHC standard.
If miniSD or miniSDHC cards are going to be used in this unit, be absolutely sure to install the special adapter prior to using them. (The unit and cards will not operate properly if only the adapter is installed on the unit. You must insert the memory card into the adapter for use.)

Cards that you can use

- **SD™ memory cards (including miniSD™ cards)**
- **SDHC™ memory cards (including miniSDHC™ cards)**

Cards that you cannot use

All memory cards except the ones shown on the left

- **MultiMediaCard**

SD memory cards with the following memory sizes can be used within this unit.

SD (8 MB to 2 GB)

8 MB	16 MB	32 MB	64 MB	128 MB
256 MB	512 MB	1 GB	2 GB	

SDHC (4 GB only)

4 GB

It is recommended that the SD and SDHC memory cards or the miniSD and miniSDHC cards made by Panasonic be used.

For the latest information on the unit and the memory cards which can be used by the unit, access the P2 support page on the web site below.

http://panasonic.biz/sav/

- SDHC is a new standard for memory cards with memory sizes of 2GB or more which was formulated in 2006 by the SD Association.
- The SD card logo is a registered trademark.
- MMC (MultiMediaCard) is a registered trademark of Infineon Technologies AG.

Specifications

[GENERAL]

Supply voltage	DC7.2 V/7.9 V
Power consumption	11 W

indicates safety information.

Operating ambient temperature
0 °C to 40 °C

Operating ambient humidity
10 to 80% (no condensation)

Storage humidity
Less than 80%

Weight
1.1 kg (main unit), 1.45 kg (including supplied battery (5400 mAh))

Dimensions (W x H x D)
104.0 mm x 84.0 mm x 227.0 mm (excluding feet)

Recording media
P2 card

[VIDEO]

1394 video recording signals:
1080i/60i, 1080i/50i, 720P/60P, 720P/50P, 480i/60i, 576i/50i
* 60P: 59.94P; 60i: 59.94i

Video recording formats:
1080i/60i, 1080i/50i, 720P/60P, 720P/50P (DVCPRO HD)
480i/60i, 576i/50i (DVCPRO50, DVCPRO and DV formats selectable)
* 60P: 59.94P; 60i: 59.94i

Playback formats
DVCPRO HD
1080i/60i (30P over 60i, 24P over 60i, 24PA over 60i)
1080i/50 i(25P over 50i)
720P/60P (30P over 60P, 24P over 60P)
720P/30PN (native recording)
720P/24PN (native recording)
720P/50P (25P over 50P)
720P/25PN (native recording)
DVCPRO50/25, DV
480i/60i (30P over 60i, 24P over 60i, 24PA over 60i)
576i/50i (25P over 50i)
∗24P: 23.98P; 30P: 29.97P; 60P: 59.94P; 60i: 59.94i

Sampling frequency
Y: 74.25 MHz, P_B/P_R: 37.125 MHz (DVCPRO HD)

Quantizing
8 bit (DVCPRO HD)

Video compression system
DV-Based Compression (SMPTE370M) (DVCPRO HD)

Video compression ratio
1/6.7 (DVCPRO HD)

Error correction
Reed-Solomon product code

Video bit rate
100 Mbps (DVCPRO HD)

Video outputs
HD/SD-SDI output:
BNC X1
HD : Compliance with SMPTE292M, 296M, 299M standards
SD : Compliance with SMPTE259M-C (480i/59.94i), ITU-R BT.656-4 (576i/50i) standards
Analog composite output:
BNC x 1, Video: 1.0 V p-p, (75 Ω)
Analog component output:
D connector x 1 (Y, PB, PR) Y: 1.0 Vp-p, (75Ω)

[MEMORY CARDS]

Recording/playback time

Card number	No. of cards used	Formatting		
		DVCPRO/ DV (2 audio channels)	DVCPRO 50 (4 audio channels)	DVCPRO HD (4 audio channels)
AJ-P2C008HG	1 card	Approx. 32 minutes	Approx. 16 minutes	Approx. 8 minutes
	2 cards	Approx. 64 minutes	Approx. 32 minutes	Approx. 16 minutes
AJ-P2C016RG	1 card	Approx. 64 minutes	Approx. 32 minutes	Approx. 16 minutes
	2 cards	Approx. 128 minutes	Approx. 64 minutes	Approx. 32 minutes

[AUDIO]

Audio recording formats

48 kHz, 16 bits, 4 channels (DVCPRO HD, DVCPRO50)

48 kHz, 16 bits, 2 channels or 4 channels (DVCPRO/DV)

Sampling frequency

48 kHz (synchronized with video)

Quantizing

16 bit

Frequency response

20 Hz to 20 kHz

Audio outputs

LINE output

Pin jacks x 2 (CH1, CH2)

Headphones

Stereo mini-jack (3.5 mm diameter) x 1

Internal speaker

20 mm round type x 1 (monaural)

[OTHER INPUTS/OUTPUTS]

IEEE1394 digital input/output

IEEE1394 6-pin x 1 400, 200 or 100 Mbps selectable

USB 2.0

HOST x 1 (type A, bus power)

DEVICE x 1 (type B)

[P2 CARD SLOTS]

P2 card slot x 2

[SD CARD SLOT]

SD memory card slot x 1

[LCD MONITOR]

3.5-inch LCD color monitor (210,000 pixels)

[AC ADAPTER]

Rated input

100V to 240V AC, 50/60 Hz, 24W

Rated output

7.9V DC, 1.9A

8.4V DC, 1.2A (during charging)

indicates safety information.

Weight

160 g

Dimensions (W x H x D)

70.0 mm ×44.5 mm ×116.0 mm

[OPTIONAL PERIPHERALS]

Battery

VW-VBD35 (2700 mAh)

VW-VBD55 (5400 mAh: identical to supplied battery)

Weight and dimensions are approximate.

Specifications are subject to change without notice.

This manual was printed
with soy based ink.

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